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CONTENT

CHAPTER 1

GENERAL INTRODUCTION

THE UNITED NATIONS CONVENTION ON THE RIGHTS OF PERSONS WITH DISABILITIES (CRPD), AN INTERNATIONAL TREATY THAT OUTLINES THE RIGHTS OF PEOPLE WITH A DISABILITY CAPTURES THE RIGHT OF CLIENTS WITH AN INTELLECTUAL DISABILITY TO BE ENGAGED IN SUPPORT AND DECISION-MAKING PROCESSES (UNITED NATIONS, 2006). THESE RIGHTS INCLUDE: "RECOGNIZING THE IMPORTANCE FOR PERSONS WITH DISABILITIES OF THEIR INDIVIDUAL AUTONOMY AND INDEPENDENCE, INCLUDING THE FREEDOM TO MAKE THEIR OWN CHOICES" AND "CONSIDERING THAT PERSONS WITH DISABILITIES SHOULD HAVE THE OPPORTUNITY TO BE ACTIVELY INVOLVED IN DECISION-MAKING PROCESSES ABOUT POLICIES AND PROGRAMMES, INCLUDING THOSE DIRECTLY CONCERNING THEM." (UNITED NATIONS, 2006)

Recent decades saw an increasing recognition of the agency of people with intellectual disabilities and the emergence of the view that they should be supported to make decisions as active citizens (Antaki, Finlay, Walton, & Pate, 2008; Antaki, Finlay, Sheridan, Jingree, & Walton, 2006; Wehmeyer, 1998). As a consequence, the empowerment of people with ID is a key aim of support services (Embregts, 2009, 2011).

The current vision on support encourages people with intellectual disabilities to manage their own lives as much as possible. This requires the abilities to conceptualize and communicate their wishes and needs and to plan and make decisions about their lives. However, these skills and the ability to formulate their support needs are not easy for people with intellectual disabilities. Due to their cognitive impairments and often problems with adaptive behaviour, they depend on support of other people like family and staff in many aspects of their lives. This provides a great challenge for support staff finding a balance in providing protection and professional support and at the same time encourage the client to become more autonomous or independent (Embregts, 2009, 2011).

The purpose of services for people with intellectual disabilities is to improve their lives (Bellamy, Newton, LeBaron, & Horner, 1990). The core quality of life domains, such as interpersonal relationships, personal development, self-determination, autonomy, and the emotional wellbeing of people with ID directly depend on what happens in the interaction between staff and clients (Schalock, 2004). In this context, their interactions are crucial for the success of services to meet the needs of people with intellectual disabilities (Social Exclusion Unit 2005).

Relationship between support staff and clients

The importance of staff in the provision of support and the crucial role they play in the lives of people with ID has been increasingly acknowledged (Emerson, Remington, Hatton & Hastings, 1995; van Asselt-Goverts, Embregts, & Hendriks, 2013; Verdonschot, de Witte, Reichrath, Buntinx, & Curfs, 2009) A number of studies show the importance of building interpersonal relationships between clients and staff in order to improve quality of life (Embregts, 2011; van Asselt-Goverts, Embregts, Hendriks & Frielink, 2014; Schalock, 2004; Shalock & Verdugo, 2002). However, there is a power imbalance in the relationship between staff and clients. The client needs support and the professional is expected to have the knowledge, skills, and attitude to provide this. Even if support staff remain in a more powerful support role, they are required to actively seek clients' opinions and to negotiate the support they need (Clark & Brennan, 1991). Reaching common ground requires a degree of mutual understanding and shared goals (Clark & Brennan, 1991; Steenbeek & Van Geert, 2007). However, it is in the everyday contact between staff and clients, where attempts to develop a more person centred approach actually happens (Social Exclusion Unit 2005).

Interactional patterns between staff and clients with an intellectual disability

The relevance of meaningful relationships and good-quality interactions between staff and clients with ID is clear. A number of researchers have examined interactions between staff and clients. For example, Antaki and Rapley (1996) and Antaki, Young, and Finlay (2002) found that staff tend to be controlling when interacting with people with an intellectual disability. Recent studies indicated that staff are inclined to use directives and questions and often fail to adjust their language to the client's level of understanding (Jingree, Finlay, & Antaki, 2006). Hence, clients seem to be presented with few opportunities to engage as equal partners in conversational interchanges (Leudar, 1981; McConkey, Morris, & Purcell, 1999). A drawback of most research on interactions between staff and clients is that it usually focuses on either the abilities of the clients or on the competence of staff (Dagnan, Chadwick, & Proudlove, 2000). However, interactions are dynamic with the inter-play between both communicative parties helping to determine what happens. In this light, investigations of Seys, Duker, Salemink, and Franken-Wijnhoven (1998) revealed that staff's involvement during interactions was related to clients' behaviours. For example, when clients showed high levels of engagement in interaction, like making eye contact, gesturing or speaking, the level of staff engagement increased. This is consistent with findings that staff members show fewer initiatives in contact and support when clients have less-developed communicative skills or higher levels of internalising behaviour (Embregts, 2003; Seys et al., 1998).

To analyse the quality of social interactions between staff and clients with ID we have to investigate interactional patterns, attunement, and responsiveness of staff and clients towards each other. Interactional patterns take place at different levels. For example, staff and clients' communicative actions, like asking questions or responding, affect the content of the interactions.Knowledge about interactional patterns at a content level will provide

insight into the power distribution during staff-client interactions and the ability to co-create a shared dialogue. Other interactional patterns take place at an unconscious level. People unintentionally adjust their (non) verbal behaviour towards one another. For example, people take turns during conversations and signal their readiness to act. These underlying dynamic patterns take place at a process level and provide insight into the collaborative nature of staff-client interactions. The present thesis will focus on interactional patterns at a content and at a process level during staff-client interactions.

Interactional patterns at the content level

Despite the broad range of studies focusing on staff and client behaviour during their interactions, there has been little work examining interactional patterns between staff and clients with intellectual disabilities. The reciprocity of their communicative actions, like initiatives and responses, is an area that warrants particular attention, as each communicative action influences the other person's action as the interaction unfolds.

At the content level, staff and clients must reach a mutual understanding of what is being said to achieve a balanced interaction. The content of what is being talked about is not just about who raises the topics being discussed or how much each individual talks, but also about sustaining and actively contributing to a shared dialogue. Consideration of the extent to which staff working with clients who have an intellectual disability are able to sustain a shared dialogue, provides insight into the collaborative nature of the relationship (Jahoda, Selkirk, Trower, Pert, Stenfert Kroese, Dagnan, & Burford, 2009). Collaboration does not just mean that staff are able to communicate effectively as experts, it also means that the client must feel that he or she is properly heard and understood (Jahoda et al., 2009). In this context, knowledge of strategies that staff and clients use to influence their interactions, like directing and controlling the other party's actions, avoiding the contribution of the other or creating coherence, is warranted. Linell, Gustavsson, and Juvonen (1988) investigated large samples of different social situations on a content level. They found interesting and characteristic differences between various conversation types, such as doctor-patient interviews, criminal trials, police interrogations, radio chat programmes, language lessons, and informal conversations between friends. For example, asymmetrical interactions were where an expert or a representative of a societal institution (physician, legal professional, teacher) interacted with a layperson (patient, client, pupil). These interactions were sustained largely by questions from the expert. Informal conversations between friends were more symmetrical, where each communicative partner usually provided a large number of expanded responses to the other person's contribution. Jahoda et al. (2009) found that the level of asymmetry in cognitive behavioural therapy sessions between therapists and clients with intellectual disabilities was similar to that found by Linell (1988) for informal conversations between friends. It would be interesting to compare the nature of staff client interactions with other types of conversations.

Interactional patterns at a process level

At the process level, an increase in research on interactional patterns is apparent, that is, the investigation of the dynamical patterns of interpersonal communication applying nonlinear techniques (e.g., Guastello, Pincus, & Gunderson, 2006; Lumsden, Miles, Richardson, Smith, & Macrae, 2012; Pincus, 2001; Pincus & Guastello, 2005; Pincus, Ortega, & Metten, 2010; Richardson, Dale, & Kirkham, 2007; Steenbeek & van Geert, 2007; Stevens, Gorman, Amazeen, Likens, & Galloway, 2013; Vallacher, Nowak, & Zochowski, 2005). The general focus of these studies is interpersonal synchronization of two or more people engaging in a (social) task.

Synchronization is a pervasive phenomenon that usually occurs spontaneously and unintentionally during an interaction. For any form of interaction to be successful, rapport or engagement appears to be of crucial importance. Rapport building, the smoothness of a social encounter and cooperation efficiency are closely linked to the ability to synchronize with a partner (Delaherche, Chetouani, Mahdaoui, Saint-Georges, Viaux, & Cohem, 2012). Several empirical studies indicate that an interpersonal coupling or synchronization is linked to feelings of connectedness (Lakin & Chartrand, 2003), mutual understanding (Shockley, Richardson, & Dale, 2009), and more cooperative abilities (Valdesolo, Ouyang, & DeSteno, 2010). Interpersonal coordination is the degree in which the behaviours in an interaction are not random, that is, patterned and synchronized in both time and form (Bernieri & Rosenthal, 1991). Investigating the underlying dynamics that occur during the mutual exchange of information provides important insights into the nature of the interaction. In this respect, adaptability plays an important role. People can be receptive to other people's actions or may be more likely to follow their own patterns of behaviour. For example, when people converse, they may use similar words or gestures, make eye contact, etc. In this context, recurrent behaviour is considered a fundamental aspect of dynamic systems (Lewis & Douglas, 1998) and can be flexible or stable. Recurrent behaviour, although necessary for stability, can also be indicative of resistance to variability. For example, when people follow their own pattern of behaviour, by delivering a monologue, they may not be open to the other person's communicative signals. A healthy interaction arises out of an optimal trade-off between stability and flexibility (Swanson, 2005).

Recently, this focus on studies on underlying dynamic patterns has been successfully adapted in the social and behavioural sciences and used to explore patterns of syntactic coordination between children and parents (Dale & Spivey, 2006), including eye movement synchronization between speakers and listeners (Richardson, Dale, & Kirkham, 2007), mother-infant gaze flexibility during reunion in a still-face procedure (de Graag, Cox, Hasselman, Jansen, & de Weerth, 2011), and intervention-induced changes in parent-child conflict conversations (Lichtwarck-Aschoff, Hasselman, Cox, & Granic, 2011). As far as we know, no studies on underlying dynamic patterns have been undertaken concerning interactions between staff and clients with an intellectual disability.

Studies on interactional patterns between staff and clients provide important insight into their attunement and responsiveness during interactions, and therefore on the quality of their interactions. However, if we want to gain a better insight into the quality of staff-client interactions it is necessary to ask the participants themselves about what they find to be the most important aspects of their interactions. Therefore the perceptions of both staff and clients on what they want to achieve during interactions and how they want to interact must be included.

Staff- client perspectives on support

The perspective of staff and clients with regard to staff-clients relationships is receiving growing attention in social science research. According to staff, good quality of care is expressed in building a meaningful relationship that is based on trust (Hermsen, Embregts, Hendriks, & Frielink, 2014) When focusing on clients' perspective regarding good quality of care, clients emphasise that support staff should respect and accept them, show interest, listen sincerely to them, be honest towards them, know their characteristics and show a caring and nurturing attitude towards them (Clarkson, Murphey, Coldwell, & Dwason, 2009; Roeleveld, Embregts, Hendriks, & van den Bogaard, 2011).

In conclusion, the importance of the interpersonal relationship between staff and clients with respect to quality of care and wellbeing of clients is increasingly recognized within research as well as in clinical practice. The quality of care is mainly enacted in social interactions between staff and clients with ID. The role of staff is to support clients with a broad range of daily living tasks, such as helping with household jobs, planning social and vocational activities, arranging appointments, healthcare, and managing relationship difficulties. Staff members have regular meetings with clients to discuss their input and agree on a support action plan, which sets out the nature of support to be given and how it will be provided. Insight into the experiences, expectations and opinions of individuals with an intellectual disability and their support staff about their routine meetings would be a meaningful addition to the literature on staff and client perspectives on their relationship.

Online support

Interactions take place in different contexts and in different forms; for example during face-to-face contacts, telephone calls and during activities. There is an extensive body of literature exploring the quality of face-to-face interactions between staff and clients with intellectual abilities. Recently, however, there has been a growing interest in online communication. Since we live in a digital world and access to support becomes ever more mobile, the need and demand for advice through the internet becomes more critical. Today's electronic technologies, including computers, cell phones, internet, and electronic organizers hold great promises for individuals with intellectual disabilities. A survey among 83 adults with intellectual disabilities revealed that 41% of participants used a computer, 25%, the Internet, and 11%, electronic organizers (LoPresti, Bodine, & Lewis, 2008). Interest in using such technologies was high and participants offered suggestions for improved accessibility. Internet-based technology, or e-health, has become increasingly important for promoting access to care and self-care management (Tjora, Tran & Faxvaag, 2005; Umefjord, Hamberg, Malker, & Petersson, 2006).

The World Health Organization promotes the use of e-health, assuming it may lead to the empowerment of clients with ID (Nijs & Timmer, 2012). Krijgsman et al. (2013) investigated the expectations of the use of e-health and distinguished six concrete prospects, it a) enhances self-efficacy of clients, b) enhances efficiency of care and reduces costs, c) leads to better continuity in care by facilitating exchange of information by different stakeholders, d) leads to improved safety for clients by preventing mistakes, e) improves quality of care by providing a means to evaluate and monitor support, f) leads to a better access of care by making online appointments and receiving online support.

Technology may help to meet an increasing demand for care in our aging society. Understanding the mechanisms by which support or advice may, or may not, take place in online contexts, is essential if we are to develop an understanding of computer mediated support. The manner in which clients with intellectual disabilities are supported needs to be connected to their personal lives and should be engaging in new and relevant ways. In other words, there is a challenge to ensure that advice, support and information are available in forms they want and can relate to.

Content of the present thesis

The present thesis focuses on interactional patterns between staff and clients during their regular interactions. It deals with the attunement and reciprocity of staff and clients at different levels and during different forms of interactions. Chapter 2 investigates how staff and clients influence the content of their routine meetings. This includes examining which verbal strategies staff and clients use to control their interactions and whether the interactions balanced in terms of power distribution? Chapter 3 deals with attunement of staff and clients at a different level, namely the synchronization of non-verbal behaviour, investigating underlying dynamic processes that spontaneously and unintentionally occur during staff-client conversations. In addition, the level of synchronization will be associated with the perceived quality of the interactions by independent staff and client observers. Chapter 4 examines whether there is an association between verbal-interactional dominance and balance, and the synchronization of turn taking patterns during staff-client meetings. Although the studies in Chapters 2 to 4 provide insights into the nature of staff client

interactions, it is also important to examine how staff and clients perceive their routine meetings. Chapter 5 investigates the perceptions of staff and clients about the goals of regular meetings they had and what they saw as the important aspects of their meetings. In Chapter 6 a new form of interaction is examined, namely online communication. Staff and clients are beginning to make more and more use of online communication, alongside face-to-face communication. This study investigates the interactional patterns of staff and clients during WhatsApp conversations. More specifically, the study investigates whether staff and clients manage to achieve a balance of power and interactional synchrony during their online conversations. Finally, the general discussion in Chapter 7 summarises the results of the empirical chapters, reflects on these findings, and describes implications for both research and clinical practice.

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CHAPTER 2

INTERACTIONAL PATTERNS BETWEEN STAFF AND CLIENTS WITH BORDERLINE TO MILD INTELLECTUAL DISABILITIES

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ABSTRACT

Background

Client centred models of care imply that clients should have a collaborative relationship with staff providing support. This study investigates whether dialogues between staff and clients in naturally occurring contexts reflect this collaborative ideal.

Method

Nineteen staff members video recorded a social interaction with one of their clients. The topic of the interaction concerned an aspect of their support needs. The recordings were transcribed and analysed using the Initiative Response Analysis designed by Linell et al. (1988).

Results

Staff were more dominant than clients, albeit the level of asymmetry in the dialogues was relatively small. However, a different pattern of turns was used by staff and clients. Staff asked more direct questions and sometimes neglected meaningful client contributions. Clients, on the other hand, provided more extended turns in response to staff members' questions, thereby helping to maintain the dialogue. However, in a notable minority of communicative turns, the clients failed to link with the staff member's contribution.

Conclusions

The interactional patterns found in this study suggest that staff and clients can face difficulties establishing collaborative dialogues on shared topics. Future research should take account of what staff and clients want to achieve in dialogues, along with the nature of their non-verbal communication.

Keywords

collaborative relationship, intellectual, disabilities, interactional patterns, social interactions, staff–client interactions

INTRODUCTION

A number of studies have highlighted that interactions between clients and staff members are often asymmetrical (e.g. Prior et al.1979; Cullen et al. 1983; Markova, 1991; Antaki et al.2002). This means that clients can have limited choice and control in their lives (Goble, 1999; Goodley 2000). However, in recent decades there has been increasing recognition of the agency of people with learning disabilities, and that they should be supported to make decisions as active citizens (Wehmeyer, 1998, Antaki et al. 2006, Antaki et al. 2008). This, in turn, has major implications for their relationships with support staff.

A more client-centred approach means that staff members would be expected to actively seek the opinion of the client, and the client should be able to talk openly and ask questions to reach shared decisions (Barry, 1999). Even if staff and professionals remain in a more powerful support role, a cooperative pattern of dialogue should mean that the power in the relationship between partners is more balanced.

Jahoda et al. (2009) stated that in addition to communicative ability per se, communication style may be a barrier for the development of a collaborative relationship. Early research on the communication style of staff in institutional settings found that they tended to use 'controlling' and directive speech rather than being engaged in social conversations (Prior et al., 1979). Even more recent studies have indicated that staff tend to favour the use of directives and questions, and can fail to adjust their language to the client's level of understanding (Jingree, Finlay and Antaki, 2006). Hence, clients would seem to have few opportunities to engage as equal partners in conversations with staff (Leudar, 1981; McConkey, Morris, & Purcell, 1999). Yet different forms of communication do appear to encourage more positive engagement. Mirenda and Donnellan (1986) found that when adults use a facilitative rather than a directive (or question-based) style, adolescents with intellectual disabilities initiated a higher proportion of topics and produced more spontaneous comments and questions in their conversational exchanges.

A drawback to the research on communication between staff and clients is that it has usually focused on the abilities of the clients or on the competence of staff (Dagnan, Chadwick, & Proudlove, 2000). With respect to clients, one prevalent view is that people with intellectual disabilities tend to be passive in communication or prone to acquiescence with people of a higher social status (Heal & Sigelman, 1995). Finlay and Lyons (2002) also pointed out that complicated questions might increase the likelihood that respondents with intellectual disabilities will simply agree with the questioner or say yes.

There has been little work examining interactional patterns between clients with intellectual disabilities and staff. Researchers often assume that interactions can be analysed from a linear perspective, which views communication as the contribution of individual acts (Linell & Markova, 1993; Markova & Linell, 1996). In communication theory, on the other hand, dialogue is viewed from an interactional perspective (Collins & Markova, 1995). It is not just about who raises the topics being discussed or how much each individual talks, but rather about two people being able to sustain and actively contribute to a shared dialogue. The more symmetrical the dialogue, the more staff and clients share the interaction on equal terms; the more asymmetrical the dialogue, the more one individual dominates. Linell, Gustavsson, and Juvonen (1988) developed an initiative-response method of analysis, which allows dialogue to be coded from this interactional perspective.

Consideration of the extent to which staff working with clients who have an intellectual disability are able to sustain a shared dialogue, provides insight into the collaborative nature of the relationship (Jahoda et al., 2009). Collaboration does not just mean that staff are able to communicate effectively as experts, it also means that the client must feel that he or she is properly heard and understood (Jahoda et al., 2009). It follows that interactions between staff and clients with an intellectual disability are crucial to how successful services are in meeting people's needs (Social Exclusion Unit, 2005, p.57). Several studies investigated the quality of the interactions between staff and clients with profound or severe intellectual disabilities and/ or communication problems (Markova, 1991, Purcell, Morris & McConkey, 1999, Bradshaw, 2001, Edge, 2001). Yet fewer studies of this kind have been undertaken with young adults with mild to borderline intellectual disabilities, who have good verbal abilities and might be expected to be more equal partners when interacting with staff.

The present study aims to capture the nature of dialogue between staff and clients with mild to borderline intellectual disability from an interactional perspective. These interactional patterns will be studied in naturally occurring contexts, and examine how cooperative dialogues between direct-care staff and adults with borderline to mild intellectual disabilities prove to be. Linell, Gustavsson and Juvonen's (1988) innovative method of interactional analysis will be used to examine the pattern of interactional dominance between staff and clients. Finally, the pattern of interaction will be examined in more detail and the responsiveness of the staff and clients to each other.

METHOD

Participants

Staff

Nineteen staff members (3 men and 16 women) working at the JP van den Bent foundation, the Netherlands, participated in this study. They were selected by a manager or psychologist and asked if they wished to volunteer to take part in the study. None of them refused. The staff members were selected from different regions and work settings in the Netherlands, so a broad range of contexts were included. Most staff members worked in community based residential houses (13), others provided outreach care (3), and the rest worked in crisis care (3). The staff members had worked in services for people with ID fro an average of 7,1 years (*Range* = 1 – 27 years).

Clients

Each staff member was asked to select a client with whom they worked frequently. At this point, the purpose of the present study was explained to the clients and their consent to participate was sought. The severity of clients' ID was assessed by means of the Wechsler Adult Intelligence Scale (WAIS-3). According to their WAIS scores, the clients' cognitive functioning ranged from the mild (8) to borderline level (11). All clients were able to verbally express thoughts and feelings fluently. Their ages ranged from 18 to 39 years (M = 25.1 years; SD =6.1). Individuals with autistic spectrum disorders were excluded from the study, as it was thought that the associated communication difficulties might have a significant bearing on their interactions with staff members. Seven of the clients were men and 12 were women and they were all living in community settings and receiving support from services; 3 clients were living alone in their own apartment with outreach support, and 7 were living alone or with a partner with 24 hours support available; 6 clients lived in staffed houses for training purposes, and 3 clients were living temporarily in staffed houses (crisis care).

Procedure

For the selection of participants, the researcher first obtained permission from the organisation to conduct the research. Managers and psychologists were provided with information about the purpose of the study. All participants volunteered for the study and received an explanation of its purpose and what would happen. The researcher contacted each staff member to explain the main goals of the study.

Participating staff video recorded a regular conversation, which had already been scheduled, with a client in his or her home. They were asked to put the portable camcorder in a corner of the room, in order to be unobtrusive and keep the situation as normal as possible. The interactions were required to meet the following criteria: 1) the topic concerned an aspect of the participants' support needs, and 2) it was a type of interaction that occurred on a regular basis, at least once a week. The average length of the video recordings was 14.6 minutes (SD = 6.2, *Range* = 7.2- 29.7 minutes). No instructions were given to the participants other than to interact as usual. Ten different types of topics were discussed: 1) establishing or refining a support action plan (n = 5), 2) planning or evaluating client goals (n = 1), 3) planning household activities (n = 4), 4) planning other activities like a schedule for the week or a visit to the doctor (n = 3), 5) discussing leisure opportunities (n = 2), 6) planning finances (n = 5), 7) reviewing clients' work situation (n = 2), 8) discussing parenting problems (n = 1), 9) coping with inter-personal conflicts (n = 6) and 10) finding solutions for a range of other problems faced by the clients (n = 3). All the topics of conversation required both clients and staff to listen actively to each other in order to achieve a shared view about how to tackle the issue being discussed.

All videotapes were then transferred into 'the observer XT'. The observer XT is professional event logging software that can be used for the collection, analysis, and presentation of observational data and is developed by Noldus (2009). Next, all videotapes were analysed using the method of coding dialogue developed by Linell et al. (1988; see below).

Measures

The aim, background and structure of Linell et al.'s (1988) approach to interactional analysis will be described, before going onto outline the measures that can be derived from this initiative response analysis, which form the basis of the results.

Method of coding interactional analysis

This analysis aims to capture dominance and coherence in dialogue. Interactional dominance includes the communicative actions, initiatives and responses taken by the interlocutors. The dominant party is the one who manages to direct and control the other party's actions to the greatest extent and who also avoids being directed and controlled in her or his own interactive behavior. Coherence is created by communicative actions that are relevant to and link-up with the preceding discourse.[1]
According to Linell et al. (1988) an 'ideal dialogue' includes the following conditions:

- Condition 1: It is locally coherent, in that interlocutors try to say things that are relevant to and cohere with the current topic.

- Condition 2: Conversationalists are mutually responsive, in that each of them links up with what the interlocutor has just said.

- Condition 3: It is progressive, in that interlocutors try to contribute the progression of the discourse by providing new material.

- Condition 4: It is coherent, in that interlocutors stick to the main content of the discourse.

- Condition 5: It is non-imposing, in that interlocutors refrain from imposing strong restrictions on the partner's responses.

- Condition 6: It is symmetrical, in that the interlocutors are in control of (and are themselves controlled in) the dialogue on an equal basis.

Linell, et al. (1988) maintain that the best way of understanding a dialogue is by comparing it with a chain, with the basic unit of analysis being each interactional turn. Each turn is coded for properties of response, or how it is linked to the previous turn, and initiative, which concerns how it links to the next turn. Initiatives continue the dialogue by requesting (soliciting or inviting) a response from the communicative partner and/or by the introduction of a new topic by the speaker itself.

Note

[1] The explanation of the Initiative Response Analysis method is derived from and therefore almost identical to the description presented by Linell et al. (1988) and Jahoda et al. (2009).

Responses ensure coherence with the preceding discourse by linking up to what the interlocutor or the speaker has said. Each turn of the dialogue under analysis is assigned to a particular category. There are 18 categories (plus three non categories: turn miscarriages, back-channel items, and inaudible turns).

The category system consists of a small set of functions for initiative and response, which are based on the conditions of what Linell et al. (1988) consider essential to an ideal dialogue. These distinguishing features include:

- The distinction between initiative and response. An initiative means that an interlocutor's communicative turn will help the conversation to progress and is symbolized by > (strong initiative) or ^ (weak initiative). A response means that an interlocutor links up with the preceding turn and is symbolized by <. Both features, initiative and response can be used in one turn.

- The strength and scope of initiatives: Initiatives can be divided into strong initiatives, that are (explicitly) inviting or demanding, for example by asking a question, which are symbolized by > and weak initiatives (asserting or submissive), which are symbolized by ^.

- The adequacy of a response; When a response is adequate (accepted) it is symbolized by <. When a response is inadequate or partially accepted, the turn is treated by the interlocutor as not satisfying the turn demands of his own preceding initiative.

- The focality of turns: Focal means focusing on the main content of the other speakers' turn'. When a response is focal it is an adequate response which is symbolized by < . A nonfocal link usually involves remarking on or challenging the form or function of the interlocutors' preceding turn. A nonfocal response is symbolized by : instead of < (adequate response).

- Scope of links; Local vs. nonlocal responses. A local response means linking up with an immediately preceding turn, which is symbolized by < (adequate). A nonlocal response is a turn being linked to a specific nonadjacent turn further back in the preceding dialogue and is symbolized by .. instead of < (adequate)

- Alter or self-linked response. When an interlocutor is linking up with the other speaker's preceding turn it is an adequate response, symbolized by < . When an interlocutor links up with the his own preceding turn, it is symbolized by = instead of <.

The whole system of turn types is given, together with brief definitions, in the Appendix. The 18 categories can be ordered on a six-point ordinal scale from the strongest initiative with no response properties, to the weakest response without any potential for promoting the dialogue further (see Table 1).

Measures of Initiative response analysis

For each dyad in this study, three measures were computed:

1. *The level of asymmetry*. For each dyad in this study the degree of asymmetry is measured. The level of asymmetry is assessed by computing the difference between the level of dominance of the staff member and that of the client.

2. *The level of dominance of clients and staff*. The level of dominance is derived from an initiative response profile. This is a summary of the frequencies of the parties' turn categories on the six-point ordinal scale. The level of dominance refers to the median value of the scores on that scale.

3. Turn types coefficients used by clients and staff, which are required to examine interactional patterns. All conversational turns were coded according to four different turn types as described by Linell et al. (1988). The frequencies of various turn types as a percentage of all turns used by each partner in the dyad, yield interaction coefficients.

Table 1. Turn Categories and Interactional Strengths on the Six-Point Ordinal Scale and the Percentage of each Interactional Strength used by Staff and Clients.

		.. >	.. ^	.. <		
		: >	: ^	(>		
		< = >	< = ^	<)		
			= >	= ^	- >	
	>	^	< >	< ^	<	-
Interactional strength	6	5	4	3	2	1
Percentage used by staff	0.6	1.3	31.2	37.1	29.7	0.01
Percentage used by clients	0.2	0.8	4.5	62.3	30.2	0.2

Turns independent and strongly proactive — Turns totally dependent and not at all proactive

Turn Types coefficients

- Expanded Reponses (B-Coefficient, B = Balance): the number of expanded responses as a percentage of all turns in the dyad. This coefficient shows how often an individual responds to what has been said and provides sufficient initiative to allow the dialogue to continue on the same topic.

- Direct Questions (S-coefficient, S = solicitation): the number of questions (or other strong initiatives) as a percentage of all turns in the dyad. This coefficient shows how often individuals explicitly solicit their interlocutors into responding on their initiative.

- Abrupt topic shifts (F- coefficient, F = fragmentation): the number of turns that break the interaction into fragments by the introduction of new and unrelated topics as a percentage of all turns in the dyad. This coefficient indicates how often parties perform abrupt topic shifts, thus contributing to local incoherence or fragmentation of discourse.

- The implicit turns (O-coefficient, O = obliqueness): the number of turns involving self linking responses or responses in which the form or function of the preceding turn is challenged as a percentage of all turns in the dyad. This kind of obliqueness is designed to capture how often actors avoid linking up with the main content of their interlocutor's adjacent turn, in spite of the fact that their contribution in question is locally related. The implicit turns can be subdivided in three categories: 1) holding monologues, 2) ignoring a meaningful contribution of the other speaker, and 3) challenging the form or function of the other speakers contribution (Linell et al., 1988).

Inter-rater reliability

In this study a total of 5105 turns were coded. Despite the complexity of the method, good inter-rater reliability was obtained between the experimenter and a research assistant. Initial inter-rater reliability coding was carried out with four videotapes encompassing 910 turns. Prior to assessment of formal reliability ratings, one videotape with 314 turns was used for training purposes. There was an overall agreement of 83% for using the same codes. Disagreements between raters were discussed and consensus on how these turns should be coded was reached.

RESULTS

The balance of power; the level of asymmetry

The level of asymmetry scores shows the extent to which social interactions were symmetrical or dominated by the staff or clients. The results show that the mean level of asymmetry was .40 (*SD* = .31, *Min* = -.07, *Max* = 1.07), which means that there was a reasonable balance of power in the dialogue, when compared with previous findings concerning a variety of communicative partners (Linell, 1988).

The level of dominance of clients and staff

The level of dominance refers to the global measure of domination or being controlled during social interaction. Linell et al. (1988) scored all turns on a six-point ordinal scale from the strongest initiative, with no attempt to respond to the other person's contribution, to the weakest response, without any attempt to elicit a response and maintain the dialogue. Table 1 shows the percentage of all 6 categories from both staff and clients, resulting in an Initiative Response Profile. The median value of the scores of the interlocutors on the ordinal scale is the level of interactional dominance. Table 2 shows that staff scores were significantly higher than client scores, which means that staff members were more dominant in these dialogues.

Table 2. Mean (M), Standard Deviations (SD), Range for the Level of Interactional Dominance, all Turn Types used by Clients and Staff

		Client	Staff	*t*-value	*P*-value
Level of dominance					
	M	2.7	3.1	-5.62	.001 **
	SD	.21	.18		
	Range	2.3 – 3	2.8 – 3.6		
Expanded responses					
	M	39.4	22.8	6.88	.001 **
	SD	8.5	7.9		
	Range	20.5 – 54.3	10.2 – 41.2		
Direct questions					
	M	4.6	32.4	-7.28	.001 **
	SD	5.8	11.3		
	Range	.8 – 23.3	12.9-66.7		
Abrupt topic shifts					
	M	1.9	2.3	-1.51	.16
	SD	1.4	1.8		
	Range	.55 – 4.5	.4 – 6.7		
Implicit turns					
	M	24.3	19.3	.89	.39
	SD	12.8	13.5		
	Range	4.2 – 7.5	4.7 – 56.5		

Interactional patterns

The overall asymmetry and dominance scores mask the complexity of the interactions revealed by this sophisticated method of interactional analysis. In this section the pattern of interaction will be examined in more detail, including the responsiveness of the staff and clients to each other. Interactional patterns were examined by calculating the associations between 1) turn type coefficients and the level of asymmetry, 2) turn type coefficients and the level of dominance of each partner and 3) turn type coefficients used by staff and turn types coefficients used by clients. Before presenting the results of these three sets of associations, a description will be given of the turn types used by staff and clients.

Descriptive statistics of turn types used by staff and clients

Turn types included expanded responses, direct questions, abrupt topic shifts, and implicit turns. With respect to these four different turn types, coefficient data were calculated for staff as well as clients. Table 2 present the percentage of the turn types for staff and clients. These coefficients represent proportions of total turns used by each communicative partner and paired-samples t tests were conducted to test for differences between staff and clients. Table 2 shows that expanded responses were used most frequently by clients. These are turns where the individual responds to what has been said and provides sufficient initiative to allow the dialogue to continue on the same topic. Clients used expanded responses significantly more often than staff did. Implicit turns were the second most common turn types for clients. Staff and clients used similar numbers of implicit turns. These are the turns in which the interlocutors fail to connect smoothly to each other and consist of 1) holding monologues, 2) ignoring a meaningful contribution of the other speaker, and 3) challenging the form or function of the other speaker's contribution (Linell et al., 1988). Table 3 shows that the majority of the implicit turns consisted of one interlocutor producing a monologue, and paying little attention to the other speaker's contribution. Both staff and clients produced a similar number of monologues, and there were also similar scores for both sets of partners ignoring meaningful contributions from the other.

Direct questions were the most frequently used turn type by staff. A very small proportion of the clients' turns included direct questions. Staff scores were significantly larger than client scores, which means that staff explicitly solicits clients into responding on their initiatives more often than clients did.

Table 3. Mean (M), Standard Deviations (SD) and Range of the Three Categories of the Implicit Turns as a Percentage of All Implicit Turns

		Client	Staff	*t*-value	*p*-value
Holding monologues					
	M	89.9	89.9	-7.49	.46
	SD	15.8	14.7		
	Range	40 - 100	50 - 100		
Neglecting a meaningful contribution					
	M	9.4	17.5	-.16	.88
	SD	10.4	15.8		
	Range	1.6 - 40	1.4 - 50		
Challenging form or function					
	M	22.9	-	-	-
	SD	26.8	-		
	Range	2.4 – 53.3	-		

Associations between the level of asymmetry and the turn type coefficients

This section will outline how the communicative acts of staff and clients were related to the balance of power in the dialogues. The level of asymmetry correlated significantly with the implicit turns used by both clients and staff. Staff dominance reduced when clients failed to link up with the main content of their interlocutor's adjacent turn. Moreover, the difference in dominance became larger when staff failed to connect with what the client was saying. Since the implicit turns mainly consisted of monologues, there was a strong correlation for both staff and clients between holding monologues and the level of asymmetry of the interaction. In one social interaction the use of implicit turns by staff was 47.7% (the level of asymmetry of that interaction was .75, which is relatively high compared to the other interactions in this study). An extract of this interaction is shown in Figure 1a:

Example a

Staff: In itself, the finances are going well, in that, when you need something we discuss together what is possible	^	*Client: Yes*	<
		Staff: Because you don't have much money you can spend in a week	= ^
Client: yes	<	*Client: mmm*	<
Staff: Then we request the money	= ^	*Staff: Because when you have extra things, like last week you wanted to go to the bingo…*	= ^
Client: mm mm	<		
Staff: That goes well	= ^	*Client: mm mm*	<
Clients; mm mm	<	*Staff: You want to have something extra*	= ^
Staff: I just think that when everything becomes more clear to you	= ^	*Client: mm*	<
Client: mm mm	<	*Staff: That does makes sense. But well, you simply don't have that.*	= ^
Staff: For example during a week, it will give you more peace	= ^	*Client: No*	<
Client: mm mm	<	*Staff So we should have a look… Well, you know how I feel about the smoking…*	= ^
Staff: Because, for example, you get stressed when you don't have enough money in the supermarket.	= ^	*Client: mmm*	<
Client: mm mm	<	*Staff: I mean, one packet of cigarettes less and it saves you 4 euro.*	= ^
Staff: When the groceries appeared to be more expensive then you thought.	= ^	*Client: mmm*	<
		Staff: Maybe you should think about that	= ^
Client: mm mm	<	*Client: Yes*	<
Staff: Maybe we should think about how we can get more rest in that..	= ^		

Example b

Client: And then via via they told me that he (boyfriend) was cheating on me	^
Staff: mm mm	<
Client: And then I said; "Listen, it is over now".	= ^
Staff: Has it been like that with all your boyfriends or just a few and do you have the feeling of being used by everybody?	< >
Client: Well, with Michael, he is also my ex	< ^
Staff: mm mm	<
Client: I've been with him for almost 2 years	= ^
Staff: mm mm	<
Client; And we had fun together and with him I did not have that feeling	= ^
Staff: You did trust him?	< >
Client: Yes	<

Figure 1. Examples of implicit turns in an unbalanced (a) and balanced interaction (b).

This long extract shows how the staff member led the conversation and the client had little input. The least asymmetry between communicative partners was .02 and in this interaction the client used at least 3 times more implicit turns than the staff-member. An extract of this interaction is shown in Figure 1b. Both staff and client influence the conversation. Table 4 also shows that neither expanded responses nor direct questioning by staff, the most frequent turn types used by the interlocutors respectively, correlated significantly with level of symmetry.

Table 4. Associations between Experimental Variables and the Level of Dominance of Clients and Staff, the Asymmetry Level, respectively.

	Dominance					
	Clients		Staff		Asymmetry	
	r	*p*	*r*	*p*	*R*	*p*
Expanded responses clients	**.58**	.01	.36	.13	-.18	.47
Direct questions clients	-.09	.77	-.28	.34	-.07	.81
Abrupt topic shifts clients	-.47	.15	.21	.53	-.49	.12
Implicit turns clients	**.7**	.001	**-.68**	.001	**-.87**	.001
Holding monologues clients	**.65**	.002	**-.73**	.001	**-.87**	.001
Neglecting clients	.18	.55	.4	.18	-.09	.77
Expanded responses staff	.01	.98	-.04	.88	-.03	.92
Direct questions staff	.12	.66	**.67**	.001	.33	.17
Abrupt topic shifts staff	-.14	.57	-.001	.99	.09	.71
Implicit turns staff	**-.62**	.005	.40	.09	**.66**	.002
Holding monologues staff	**-.66**	.002	.37	.12	**.66**	.002
Neglecting staff	.34	.31	**.63**	.04	.01	.97

Note. The correlations in bold type font are significant.

Associations between the level of dominance of staff and clients and the turn type coefficients

The associations between the level of asymmetry and the different turn type coefficients gives us information on interactional patterns of the dyad in general. In this section we will give more detailed information on what type of turns gave staff and clients control over the interaction. Associations were calculated between the level of dominance of each interactional partner and the various turn types. Clients increased their dominance by using expanded responses (Table 4). Implicit turns were the second most common turn types for clients and there was a positive and significant correlation between clients holding monologues and their level of dominance. In turn, clients' dominance decreased when staff held more monologues.

Staff also became more dominant by asking more direct questions and neglecting meaningful contributions from the other speaker. In the most unbalanced interaction (level of asymmetry = 1.07), the staff member asked direct questions in 67% of the turns. An extract of the interaction is provided in Figure 2.

Staff: Can you describe which feeling you have when you are feeling not so good	>
Client: I don't know how to describe that	<^
Staff: No, that is difficult. But what do you feel on such a moment?	< >
Client: I don't know	< ^
Staff: You don't know, but do you know what you want to do on such a moment?	<>
Client: Searching distraction	< ^
Staff: Yes, in the past you choose to do other things, as last you went to buy a can of beer. Can you tell me why you did that?	< >

Figure 2. Example of direct questions in an unbalanced social interaction.

Associations between turn types used by staff and turn types used by clients

This section will describe which turn types from one interlocutor tended to elicit particular response from the other person. Although all possible correlations between the different turn types were calculated, Table 5 only shows the associations that were significant.

Table 5 shows that there was a strong correlation between the number of direct questions give by one speaker and the expanded responses of the other. In turn, when clients used more expanded responses then staff were more inclined to link up with the main content of what the client was saying. The more questions clients asked, the fewer questions staff produced, and vice versa. When it came to implicit turns, there was a negative association between clients' failure to link with the content of what the staff said, and staff responses to what clients were saying. This finding is consistent with the fact that most implicit turns were monologues. It is also noteworthy that there was a strong positive correlation between the number of direct questions produced by clients and abrupt topic shifts by staff. Additionally, Table 5 shows that abrupt topic shifts by staff were associated with the same turn types by clients. An example of this pattern is illustrated by an excerpt of a dialogue in Figure 3. In this example staff and client are discussing several topics, and is characterized by both of them making sudden changes of topic. The result is a fragmented dialogue.

Table 5 Associations between the Turn Types used by Clients and the Turn Types used by Staff

	r-value	*p*-value
Expanded responses clients - Direct questions staff	.51	.03
Expanded responses clients - Implicit turns staff	-.52	.02
Expanded responses clients - Holding monologues staff	-.56	01
Direct questions clients - Direct questions staff	-.69	.01
Direct questions clients - Expanded responses staff	.72	.004
Direct questions clients - Abrupt topic shifts staff	.66	.01
Abrupt topic shifts clients - Abrupt topic shifts staff	.84	.001
Implicit turns clients - Implicit turns staff	-.69	.001
Holding monologues clients - Holding monologues staff	-.7	.001

Staff and client are planning their next meeting	
Client: So it will be next Friday, ok..	< ^
Staff: Yes	<
Client: but.. I don't know, with these games.. with Jason (client's son)	^
Staff: Yes	<
Client: Is that useful?	= >
Staff and client discuss the utility of play therapy for the client's son.	
Staff: And play therapy will be covered by your insurance.	= ^
Client: Did you call Jane?	>
Staff: No, I e-mailed her and asked if you could get compensated for the clothes and if you could get money from the school fond.	< ^
Staff and client then discuss which persons were contacted and which agreements were made.	
Staff: I tried to contact Ziggo, but I don't think he works on a Friday, so I didn't get that answer.. I will contact him on Monday from my home, if you agree with that.	< ^
Client: Yes , please	< ^
Staff: Friday I will have to go to training.	^
Client: well that is part of the job	< ^

Figure 3. Example of a fragmented interaction.

DISCUSSION

The analysis found that recorded interactions between staff and clients were dominated by staff. Staff dominance was characterized by the use of direct questions. This pattern is consistent with past studies that have found staff favour the use of directives (McConkey et al., 1999; Prior et al., 1979). Although this study did not investigate the type of questions being used, a strong relationship was found between the number of questions asked by staff and the use of expanded responses by clients. Therefore, staff questioning did not always inhibit dialogue but could elicit responses from clients that helped to maintain dialogue on a shared topic. In other words, the questions asked by staff could enable clients to play an active role in the interaction.

Although staff were usually dominant, the interactions between staff and clients were reasonably balanced. Linell et al., (1988) investigated large samples of different social situations using the initiative-response analysis.

They found interesting and characteristic differences between various conversation types, such as doctor-patient interviews, criminal trials, police interrogations, radio chat programmes, language lessons, and informal conversations between friends. Comparisons with these previously published data showed that the mean scores of the level of asymmetry of social interactions between staff and clients in this study were akin to scores obtained from informal conversations between friends.

On closer examination, there were a wide variety of scores concerning the level of asymmetry for the participants' dialogues. While fourteen out of the nineteen conversations in the study were in the same range as the scores for informal conversations between friends, four were in the same range as dialogues in radio-chat programs, and one in the same range for doctor-patient interviews. Jahoda et al. (2009) also found that the level of asymmetry in cognitive behavioural therapy sessions between therapists and clients with intellectual disabilities was similar to that found by Linell (1988) for informal conversations between friends. However, it would be mistaken to think that the staff members were treating the clients as friends, as they were the ones who were asking the questions. As stated previously the balance was achieved by clients providing expanded responses to the questions, thereby helping to maintain the dialogue. However, another contributory factor helping clients to dominate sections of dialogue was by holding monologues and failing to pay attention to the other speakers' contributions.

The coding system did not reveal the reason why clients used implicit turns. Holding monologues may have been a result of clients' misunderstanding what was being said to them. Several studies have investigated the communication difficulties people with an intellectual disability may experience (Bartlett & Bunning 1997; Bott et al. 1997; Law & Lester 1991), and the mismatch that can sometimes be found between the clients' level of understanding and the language used by staff (Blackwell et al. 1989; Bradshaw 2001; Enderby & Davies 1989; Purcell et al. 1999; van der Gaag 1998). Given the fact that staff used an almost equal number of implicit turns, another plausible explanation for the use of such turns must be considered; staff and clients with borderline to mild intellectual disability might want to talk about different things. The implicit turns may be related to competition between the communicative partners (Linell et al., 1988), and there did appear to be tensions about who was in charge of the interaction. When clients tried to control the interaction by asking questions, staff performed more abrupt topic shifts, possibly trying to bring the client back to their agenda. As a reaction, clients may have increased their use of fragmented turns. This suggests that there may have been a tension between the clients' goals and those of staff during the dialogues. Studies concerning shared decision-making suggest that there can be a discrepancy between staff and clients' perceptions about who makes decisions (Antaki, 2002; Carle, 1986; French, 1994; Jenkinson et al, 1992; Jingree et al. 2006). However, as with the use of implicit turns, there are other possible explanations of why clients and staff use fragmented turns.

The method of interactional analysis used in this study shows promise in contributing to an understanding of conversations as a mutual process in terms of maintaining a dialogue. However, care needs to be taken in the interpretation of the patterns found in this research. To understand what the patterns of interaction actually mean, it is necessary to link the analysis more closely to what the dialogues are about (Linell et.al. 1988). In this light, Antaki's and Finlay's sophisticated investigations of interactions between staff and clients with intellectual disabilities combine ethnography with fine-grained Conversation Analysis to identify some conversational practices that staff use to offer choices to clients with intellectual disabilities (Antaki et al. 2006, Antaki et al. 2008, Finlay, Walton & Antaki. 2008). Taking greater account of the nature and context of the dialogues being analysed would help to inform a more sophisticated analysis of staff – client interaction using Linell's approach.

Another drawback to the present study is that the coding frame focused on verbal communication per se. However, social interaction consists of both verbal and non-verbal communication, including facial, vocal, and postural transfer of information (Winkielman, McIntosh, & Oberman, 2009). Consequently, non-verbal patterns of interaction between staff and clients may provide important additional information about how they communicate and the power relationships. Studies of both verbal and non-verbal interactional patterns could inform training for front-line staff in services for people with intellectual disabilities, to enhance their communication skills and help foster a more client-centred approach.

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Appendix

Legend of the 18 Categories as designed by Linell et al. (1988)

Symbol	Description
< >	Turn with clear properties of both response and initiative, the retroactive part (response aspect) being linked to the main content of the interlocutor's preceding (adjacent) turn and the proactive (initiating aspect) involving a strong initiative. By 'strong initiative' the speaker explicitly solicits or demands a response from the interlocutor.
< ^	Turn same as <> except that the proactive part is a weak initiative. By 'weak initiative 'the speaker asserts something or submits a proposal for comment without explicitly soliciting or demanding (but often inviting) a response from the interlocutor. (Prototypical expanded response)
>	Turn involving a strong initiative on a new and independent topic ('free initiative' with no retroactive part).
^	Turn involving a weak initiative on a new and independent topic ('free initiative' with no retroactive part).
<	Turn linked to the interlocutor's adjacent turn and involving no initiating properties (minimal response). The turn is treated by the interlocutor as satisfying the demands of (being conditionally relevant to) his own preceding initiative (adequate response).
..>	Non-locally linked strong initiative: turn with clear properties of both response and a strong initiative, the retroactive part being linked to a specific nonadjacent turn further back in the preceding dialogue.
..^	Non-locally linked weak initiative, turn with clear properties of both response and a weak initiative, the retroactive part being linked to a specific nonadjacent turn further back in the preceding dialogue.
..<	Turn linked to and treated as satisfying the demands of, a nonadjacent initiative and involving no initiating properties. This is a nonlocal minimal response to a nonadjacent initiative, for example to a question posed at an earlier point in the dialogue.
= >	Turn linked to the speaker's own preceding turn (rather than the interlocutor's turn) involving a strong initiative. The turn is either merely a repetition or simple reformulation of the speaker's preceding initiative or (in case the interlocutor has only given or tried to give a minimal response) a continuation of this preceding turn. Typically occurs when the interlocutor's interjacent utterance is not accepted as an adequate response.
= ^	Turn linked to the speaker's own preceding turn (rather than the interlocutor's turn) involving a weak initiative. The turn is either merely a repetition or simple reformulation of the speaker's preceding initiative or (in case the interlocutor has only given or tried to give a minimal response) a continuation of this preceding turn.
< = >	Turn with clear properties of both response and strong initiative, the retroactive part being linked to the speakers own preceding turn and clearly ignoring an interjacent initiative (strong or weak) by the interlocutor. Ostentatiously self-linking initiative.
< = ^	Turn with clear properties of both response and weak initiative, the retroactive part being linked to the speaker's own preceding turn and clearly ignoring an interjacent initiative (strong or weak) by the interlocutor. Ostentatiously self-linking initiative.
: >	Turn with clear properties of both response and strong initiative, the retroactive part being non-focally linked to the interlocutor's preceding turn. A non-focal link usually involves remarking on, or challenging, the form and/or function of the interlocutor's preceding turn.
: ^	Turn with clear properties of both response and weak initiative, the retroactive part being non-focally linked to the interlocutor's preceding turn. A non-focal link usually involves remarking on, or challenging, the form and/or function of the interlocutor's preceding turn.
-	Turn linked to, or at least possibly linked to, the interlocutor's adjacent turn and involving no initiating properties. The turn is treated by the interlocutor as not satisfying the turn demands of, or as not even conditionally relevant to, his own preceding initiative. This is a (minimal and) inadequate response.
->	Turn linked to the interlocutor's preceding turn but deferring rather than In itself providing the adequate response to that turn. This type of contribution involves a very weak initiative, subordinated to the interlocutor's preceding turn, and has no further initiating properties of its own. This is a deferring question asking for repetition, confirmation, or simple clarification of something contained in the interlocutor's preceding turn.
(>	Turn lacking substantial content but involving an initiative (such as a proposal) to open a new topic or subgame (the topic to be introduced in the speaker's next turn). This is a preparatory initiative or preinitiative.
<)	Turn closing, or preparing to close, the current topic or subgame, and involving no further new initiatives.
X	Turn miscarriage turn which does not count to the dialogue at all, for example when they are interrupted.

CHAPTER 3

CONVERSATIONAL SYNCHRONIZATION IN NATURALLY OCCURRING SETTINGS: A RECURRENCE-BASED ANALYSIS OF GAZE DIRECTIONS AND SPEECH RHYTHMS OF STAFF AND CLIENTS WITH INTELLECTUAL DISABILITY

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ABSTRACT

Past research has shown that rapport and cooperation between individuals is related to the level of nonverbal synchrony they achieve in their interactions. This study investigates the extent to which staff and clients with mild to borderline intellectual disability achieve interactional synchrony in daily social interactions. Whilst there has been work examining how staff can adapt their verbal communication to help achieve better mutual understanding there has been an absence of work concerning the responsiveness of staff and clients regarding their nonverbal behavior.

Nineteen staff members video-recorded a social interaction with one of their clients in which the client had a need for support. The recordings were analysed using Cross Recurrence Quantification Analysis. In addition, fifteen staff members as well as clients with an intellectual disability completed a questionnaire on the quality of the nineteen video-recorded interactions.

Analysis of the nonverbal patterns of interaction showed that the staff – client dyads achieved interactional synchrony, but that this synchrony is not pervasive to all nonverbal behaviours. The client observers appeared to be more sensitive to this synchrony or to value it more highly than the staff raters. Staff observers were sensitive to quantitative measures of talking. The more staff in the interactions talked the lower the quality rating of the interaction. The more the clients talked, the more positively the staff observers rated the interactions.

These findings have implications for how collaborative relationship between clients and support workers should be understood.

Keywords

staff–client interactions , collaborative relationship, intellectual disabilities, interactional patterns, social interaction, nonverbal communication

INTRODUCTION

'Interactions between staff and clients with an Intellectual Disability (ID) are crucial to how successful services are in meeting people's needs' (Social Exclusion Unit 2005, p. 57). Successful social interactions also contribute to the empowerment of clients with ID by encouraging them to play an active part in inter-personal encounters. Finlay, Walton, and Antaki (2008, p. 350) state that: 'Empowerment is not just about choosing to take this type of support rather than that, but it is about what happens between people moment by moment, in the mundane details of everyday interaction'.

A number of researchers have examined verbal interactions between staff and clients. For example, Antaki and Rapley (1996) and Antaki, Young, and Finlay (2002) found that staff tend to be controlling when interacting with people with an intellectual disability. Recent studies indicated that staff tend to favour the use of directives and questions and may fail to adjust their language to the client's level of understanding (Jingree, Finlay, & Antaki, 2006). Hence, clients seem to be presented with few opportunities to engage as equal partners in conversational interchanges (Leudar, 1981; McConkey, Morris, & Purcell, 1999).

In contrast to these findings, a recent study by Reuzel, Embregts, Bosman, van Nieuwenhuijzen, and Jahoda (2012) found that interactions between staff and clients had a relatively balanced distribution of power, albeit each communicative partner tended to use different verbal strategies to influence the conversation. Staff asked more direct questions and sometimes neglected meaningful contributions from clients. Clients, on the other hand, provided more extended turns in response to staff members' questions, thereby helping to maintain the dialogue. However, in a notable minority of communicative turns, the clients failed to link with the staff member's contribution. This points to the difficulties staff and clients can face when trying to establish collaborative dialogues on shared topics. Despite the growing body of work in the field of verbal communication between staff and clients, there is a paucity of research concerning the underlying nonverbal dynamic processes that occur during communication. Therefore, the present paper will focus on the nature of nonverbal dynamical interactional patterns between staff and clients with intellectual disabilities (ID).

To improve communication, the onus has been on the staff member to adjust their verbal communication by using simpler language and to listen carefully to what the client is saying (Bartlett & Bunning, 1997; Jahoda et al., 2009). Perhaps the reason why less emphasis is placed on nonverbal behavioural patterns has been the assumption that even people with mild intellectual difficulties may have greater difficulty with socio-emotional understanding. Problems interpreting emotional cues have been suggested as reasons for higher levels of aggressive behaviour displayed by individuals with intellectual disability (Zaja & Rojahn, 2008). While people with autism have quite specific socio-emotional deficits, Moore (2001) made clear that this is not necessarily the case for people with intellectual disabilities. He pointed out that a drawback with research in this area is that it has often examined people's ability to label static emotional cues. However, the ability to synchronize inter-personal behaviour when interacting with others relies on other tacit skills for dealing with dynamic social cues. This is, therefore, an area that warrants further investigation.

There have been striking insights into the brain's sensitivity to social information (for a review, see Cacioppo, Visser, & Pickett, 2006) and the way in which people think and act cooperatively (Hutchins, 1995).An essential feature of this so-called joint action is how each person's nuanced actions shape the other's as the joint action unfolds.

For example, when two people talk, they spontaneously converge in terms of pausing and speaking duration, speaking rate, turn duration, response latency, vocal intensity, and accent. Movements and postures, likewise appear to be spontaneously coordinated with speech within and across individuals (see Fowler, Richardson, Marsh, & Shokley, 2008 for a review). Interpersonal coordination is the degree in which the behaviours in an interaction are non-random, that is, patterned and synchronized in both time and form (Bernieri & Rosenthal, 1991).

In this study, synchronization will be defined as the reciprocity of staff and clients' nonverbal behaviour or in the coordination of taking turns. A variety of theoretical frameworks predict the resemblance of behaviours between two people engaged in communication, in the form of coordination, mimicry, or alignment. For example, there is evidence that people coordinate their behaviour when they collaborate to solve problems with mutually understood structure (Sebanz, Bekkering, & Knoblich, 2006). However, little is known about the time course of the behavior matching (Louwerse, Dale, Bard, & Jeuniaux, 2012). Therefore, this study examines the temporal relationship between two specific nonverbal matching behaviours of the communicative partners, namely gaze direction and speech rhythm. These behaviours are key elements of dialogue (Goodwin, 1981; McNeill 1992; Sacks, 1992). The alignment of speech rhythms and gaze patterns have been examined by a number of researchers (Capella & Planalp, 1981; de Graag, Cox, Hasselman, Jansen, & de Weerth, 2011; Giles, Coupland & Coupland, 1991; Louwerse et al., 2012; Richardson, Dale, & Kirkham, 2007; Street, 1984) and are found to be associated with the quality of the interactions. We chose speech rhythm and gaze direction as behavioural variables, because they enabled us to assess the behaviour of multiple dyads in a similar way. As far as we known, no information is available on the level of synchronization of nonverbal behaviour that occurs within the specific context of daily social interactions between staff and clients with mild to borderline intellectual disability.

Investigating the underlying dynamics that occur during the mutual exchange of information provides important insights into the nature of the interaction. For example, the coordination of turn taking requires cooperation between staff and clients at a nonverbal level, in terms of taking initiatives and being responsive to each other. Chapple (1970) found that during interaction partners signal their readiness to act, and the patterns observed between interactants represent the compromises they reach, which we refer to as synchrony. It has also been demonstrated that the cyclicity of vocal activity increases over the course of face-to-face dialogues (Warner, 1992). This means that, as the conversation progresses, interactants search to find a rhythm that allows them to take turns holding the floor while still following their own tendency to be talkative. Optimally, interactants reach a point at which their tendencies to be talkative alternate, resulting in fewer interruptions and silent pauses. Conversational precision is thus a function of the phase relation between each speaker's vocal activity rhythms.

Other studies found that the eye movements of two interactants are coupled and that this coupling reflects the quality of the interaction (de Graag, Cox, Hasselman, Jansen, & de Weerth, 2011; Richardson, Dale & Kirkham, 2007). In addition, eye movements were found to embody the cognitive processing involved in cooperative conversation and the shared knowledge among interlocutors (Shockley, Richardson & Dale, 2009).

More recent studies stressed the theoretical significance of the manner and extent to which people synchronize behaviour matching during social interaction (Schmidt et al. 2012). Louwerse et al. (2012) found that synchronization is pervasive and uniform within multiple modality groups and this synchronization is sensitive to social and task variables. Hove and Risen (2009) stressed the relationship between synchronization and social affiliation, with each enhancing the other. Rapport building, the smoothness of a social encounter, and cooperation efficiency are closely linked to the ability to synchronize with a partner (Delaherche et al., 2012). For interactions to be successful, rapport or engagement appears to be of crucial importance. Rapport is a phenomenon that emerges during the interaction between individuals; it is not a personality trait, albeit some people may be better at inducing rapport than others. It refers to a situation in which people have similar feelings and experience positive interactions. According to Tickle-Degnen and Rosenthal (1990), rapport consists of three components: mutual attention, mutual positivity (friendliness and caring), and coordination. Behavioural coordination becomes particularly important when interactants learn to know each other. Behavioural coordination is visible when people mirror one another in posture or when they are in interactional synchrony (e.g., Chartrand & Bargh, 1999). Miles, Nind, and Macrae (2009) found a direct link between levels of rapport and interpersonal coordination, that is, high levels of rapport were associated with stable coordinative interaction patterns.

In this study, a nonlinear time-series analysis technique called recurrence analysis was used to examine the nonverbal patterns of synchronization of staff and client dyads (e.g., Church, 1993; Eckmann, Kamphorst, & Ruelle, 1987; Marwan, Romano, Thiel, & Kurths, 2007; Von Heijne, 1987; Zbilut & Webber, 1992; see Dale and Spivey, 2005, for a review, and Webber & Zbilut, 2005, for an excellent technical introduction). This technique was originally used for the analysis of time series of continuous variables of physical or biological systems. Recently, however, the technique has been successfully applied in the social and behavioural sciences and used to explore patterns of syntactic coordination between children and parents (Dale & Spivey, 2006), eye movement synchronization between speakers and listeners (Richardson, Dale, & Kirkham, 2007), mother-infant gaze flexibility during reunion in a still-face procedure (de Graag et al., 2011), and intervention-induced changes in parent-child conflict conversations (Lichtwarck-Aschoff, Hasselman, Cox, & Granic, 2011). This method provides an analysis of global structural patterns of dialogue, charting how gaze direction and temporal speech patterns of staff and clients align during interaction.

By global we mean drawing general quantitative measures with minimal dependence on statistical assumptions, describing the extent to which a series of staff-client interactions involves gaze direction and temporal speech structures that are more or less attuned to each other. The aim is to quantify the extent to which nonverbal behaviour is coordinated in naturalistic dialogue (Dale & Spivey, 2006). Because knowledge with respect to synchronization of gaze direction and speech rhythms is scarce, especially within the context of natural face-to-face dialogues, we did not know what to expect. We assumed that high levels of speech synchronization and gaze directions are related to higher levels of rapport, based on earlier findings in the literature.

We formulated the goal of the current paper in terms of three specific questions concerning nonverbal behaviour between staff and clients with ID:

1. What level of attunement and synchronization (i.e., coordination) is achieved in terms of their gaze directions and speech rhythms?

2. What is the pattern of dominance in the dialogue with respect to interlocutors initiating nonverbal behaviours such as gaze direction or following the other's lead?

3. Are key elements of staff and clients' coded nonverbal behaviour (levels of attunement and dominance) associated with observer ratings of the quality of the interactions?

METHOD

Participants

Staff

Nineteen staff members (3 men and 16 women), working at the JP van den Bent foundation in the Netherlands, participated in this study. This is a foundation that provides services to people with an intellectual disability. The role of staff is to support clients with a broad spectrum of daily living tasks, such as helping with household jobs, planning social and vocational activities, arranging appointments, healthcare, and relationship difficulties. Staff members discuss their input with clients and agree on a support action plan, which sets out the nature of support to be given and how it will be provided. The staff members worked in different regions and work settings. Most staff members (n = 13) worked in community-based residential houses, three worked in outreach care for people living in their own homes, and three worked in crisis care, which is care for people who need immediate housing and care due to different causes, for example a mental breakdown. Their mean experience of working in services for people with ID was 7.1 years (*Range* = 1 – 27 years).

Clients

Each staff member was asked to select a client with whom they worked frequently, or who they meet with at least once a week. Clients' chronological ages ranged from 18 to 39 years (M = 25.1 years; SD =6.1). Seven of the clients were men and twelve were women, and they all lived in community care settings and received support from services; three clients lived alone in their own apartment with outreach care, and seven lived alone or with a partner with 24 hours support available; six clients lived in staffed houses for training purposes, and three clients lived in staffed houses temporarily (crisis care). The Wechsler Adult Intelligence Scale (WAIS-3) was used to assess their level of cognitive functioning. Their scores ranged from mild (8) to borderline intellectual functioning (11). Mild intellectual functioning means having an Intelligent Quotient between 50 and 70, and borderline intellectual functioning means having an IQ between 70 and 85. All clients had sufficient verbal ability to express their thoughts and feelings.

Observer raters

Fourteen staff members and fourteen clients with ID observed the nineteen interactions on video. Staff and clients worked or lived in crisis care and did not know the staff and clients shown on the video recordings. The mean age of staff was 32.4 years and ranged from 20 to 52 years. Eleven staff members were women and three were men. Clients' ages ranged from 18 to 59 years (M= 26.9 years). Six of the clients were men and eight were women. Their WAIS scores ranged from mild (6) to borderline intellectual functioning (8). All clients had good expressive and receptive verbal skills.

Procedure

After obtaining permission from the organization to conduct the research, managers and psychologists were provided with information about the purpose of the study. Staff and clients who volunteered for the study received an explanation of its purpose and what was involved in participating. Staff and clients were informed orally and in writing; informed consent was obtained.

Participating staff video-recorded a regular conversation, which had already been scheduled, with a client in his or her home. They were asked to place the portable camcorder unobtrusively in a corner of the room, and to keep the situation as normal as possible. The interactions were required to meet the following criteria: 1) the interaction was related to the client's support plan, 2) the topic concerned an aspect of the participants' support needs, and 3) these particular interactions occurred on a regular basis, at least once a week. The average length of the video recordings was 14.6 minutes (SD = 6.2, *Range* = 7.2- 29.7 minutes). No instructions were given to the participants other than to interact as usual.

Ten different types of topics were discussed: 1) establishing or refining a support action plan (*n* = 5), 2) planning or evaluating client goals (*n* = 1), 3) planning household activities (*n* = 4), 4) planning other activities like making a weekly schedule or arranging a visit to the doctor (*n* = 3), 5) finding suitable leisure opportunities (*n* = 2), 6) planning finances (*n* = 5), 7) evaluating their work situation (*n* = 2), 8) discussing problems related to child care (*n* = 1), 9) coping with (conflicts with) other persons (*n* = 6) and 10) finding solutions for problems the clients faced (*n* = 3). All the topics of conversation required the clients and staff to listen actively to each other, in order to reach a shared view about how to tackle the issue being discussed.

Data preparation

All videotapes were then transferred to 'The Observer XT'. The Observer XT is a professional event-logging software for the collection, analysis, and presentation of observational data and was developed by Noldus (2009). Next, nonverbal behaviour was coded for staff and clients, namely the gaze direction (is the staff member or the client looking at the other person or is he/she looking elsewhere?) and speech rhythm (is the staff member or client talking or is he/she silent?). In order to prepare the data for analysis, four continuously-scored sequences of nonverbal behaviours were created for each dyad. Specifically, there were two time series' for gaze direction and two for speech rhythm, showing the client's and staff's looking and talking behaviour over time. Each time series represented a dichotomous variable. That is, a score of 'one' representing staff or client looking at the other or talking, and the score 'zero' representing staff or client looking elsewhere or being silent. The raw time series was sampled with a sampling rate of 1 Hz. Choosing a sample rate that is too high will either amplify the effects of noise or inflate the influence of relatively stable periods. A sample rate that is too low will result in under-determination of the relevant aspects of the behaviour (particularly turn-taking in this study). The 1-Hz sample rate chosen here was considered to reveal the relevant dynamics of the conversation, since preliminary analysis established that the average turn durations of both interlocutors was longer than one second. So, finally, the four time series each had a single value at every interval of one second. Figure 1 presents an example of a time series of both staff member's and client's (1-Hz sampled dichotomized) nonverbal behaviour.

Shown is an example piece of time series for talking behaviour or looking behaviour of both a staff member and a client. A '1' means talking or looking at the other, whereas a '0' means silent or looking elsewhere, respectively. The time code 't' is a particular instance in the time series, and every step earlier or later represents the behaviours at one second earlier or later in the conversation.

Time code	...	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	...
Staff	...	0	0	1	1	1	1	1	1	0	...
Client	...	1	1	1	1	0	0	0	0	1	...

Figure 1. Example of time series.

These four time series' were analysed with traditional linear analyses (distributions, t tests, and correlations) and a nonlinear analysis, namely, recurrence quantification analysis (Cross Recurrence based; CRQA). The CRQA will be explained below. To assess inter-observer reliability initial coding was carried out with four videotapes, encompassing 53.2 minutes in which the gaze direction and talk/silence sequences of staff and clients were continuously coded. Inter-observer reliability was computed allowing a 0.5 second overlap. Since the video recordings were home-made and therefore the quality was variable, the recordings were displayed in slow motion in order to access an optimal accuracy on the moments where persons started or stopped talking or looked at the other or looked away. There was an overall agreement of 76% for gaze direction and 81% of the talk/silence sequences.

Next, fourteen staff members and fourteen clients observed the nineteen video-recorded interactions. After each video fragment they completed a short questionnaire derived from the Session Rating Scale (SRS) for staff and the Mentally Disabled Session Rating Scale (MSRS) for clients from Duncan, Miller, and Sparks (2004), resulting in four items to evaluate each dyad:

- *The relation:* Did staff listen to the client?
- *Goals and subject:* Did the client want to talk about the items that were discussed?
- *Method:* Was the way staff discussed the items adequate?
- *Overall:* What was the overall impression of the interaction?

The questionnaire for clients was adjusted in consultation with four clients who did not participate in the observations. The language was changed to make the questions more accessible. After each question, the observer placed a dot on a 10 cm long line; the further they placed the dot to the right, the more positively the item was evaluated. For clients, visual means of support were added in the form of emoticons: A happy face was placed on the right side of the line and a sad face was placed on the left side of the line. Before staff and clients started the observations proper they practiced using the questionnaire with two example video fragments that were not included in the study.

The researcher explained the items and made sure all observers understood what was being asked of them. The researcher had not met any of the observers prior to the research. The questionnaires were filled in anonymously and in silence, with no obtrusion from the researcher.

Data Analysis

In this section two types of analysis will be presented: The Traditional Linear Analysis and the Recurrence Quantification Analysis.

Traditional Linear Analysis

This type of analysis offers a global overview of the amount and distribution of talking and looking of both staff and clients during the conversation. That is, this analysis will provide central tendency measures of the behaviour of the interaction patterns. The frequencies of the different behaviours (gaze direction and talk and silence sequences) for each time series, the percentage of synchrony (%Sync), and correlations between these measures will be presented. Percentage synchrony is defined as the amount of time that the interacting partners spend looking at each other, or when one is talking while the other remains silent, as a percentage of the total duration of the interaction.

Recurrence Quantification Analysis

Recurrence Quantification Analysis (RQA) is used to assess how coordinated the nonverbal behaviour of the staff and clients is as the interaction unfolds. RQA is relative unknown within the field of social science and an extensive description is provided below. RQA is a particular type of nonlinear time-series analysis based on the registration of whether a system's state at each and every point during an observation recurs, that is, repeatedly occurs (e.g., Marwan et al., 2007; Webber & Zbilut, 2005; Zbilut & Webber, 1992). From these basic recurrences, several measures can be derived that quantify the dynamic organization of the underlying system. In order to study two interacting systems, cross-recurrence quantification analysis (CRQA) is performed (e.g., Shockley, Butwill, Zbilut, & Webber, 2002). In CRQA, recurrence reflects that the behavioural state of one of the systems (in this study the behaviour of one interlocutor) also occurs in the other system (i.e., the other interlocutor) at some point in the time series either earlier, concurrently, or later. In the present study CRQA allows us to analyse attunement, synchrony, and dominance of staff's and client's gaze behaviour and speech rhythm from the temporal pattern in the time series.

The main research questions to which this analysis was applied were: 1) What level of attunement and synchronization (i.e., coordination) is achieved in terms of their gaze directions and speech rhythms? 2) What is the pattern of dominance in the dialogue in relation to interlocutors initiating nonverbal behaviours such as gaze direction or following the other's lead? 3) Are key elements of staff and clients' coded nonverbal behaviour (levels of attunement and dominance) associated with observer ratings of the quality of the interactions? In terms of recurrence analysis these questions translate to the quantification of recurrence (i.e., counting recurrent points), particularly on and around the line of synchrony in the recurrence plot, as will be explained below.For an excellent in-depth treatise of CRQA in the context of conversation research, similar to the analysis performed here, we refer to the paper by Dale and Spivey (2006).

To answer the research questions stated above, categorical CRQA was performed on both the gaze-direction and the speech-rhythm time series of client and staff. This means that matches between nonverbal behaviours of all instances in the client's time series and all instances in the staff's time series are registered. These matches can graphically be represented in a two-dimensional grid, the rows of which represent the nonverbal behaviours of talking or looking of one of the interlocutors and the columns represent those of the other interlocutor. In each cell of this grid we place a 'black dot' when the cell reflects a recurrence (i.e., matching nonverbal behaviour) or 'white dot' when there is no recurrence (i.e., non-matching nonverbal behaviour).

In this study we have chosen the following operationalization of 'recurrence': With respect to gaze direction a black dot reflected the combination of both staff and client looking at each other, whereas a white dot reflected all other combinations (i.e., one or both looking elsewhere). With respect to speech rhythm a black dot reflects an instance where only one of the interlocutors was talking, and a white dot reflects an instance where both were talking or both were silent. The reason for this particular arrangement of matching of client's and staff member's nonverbal behaviours is that it offers a meaningful partitioning of the interaction, as will become clear. The resulting graph is a Cross Recurrence Plot (CRP) of two time series (Figure 2). With the black-and-white colouring the CRP visualizes the periods where matching nonverbal behaviours are occurring and where behaviours are non-matching during the conversation.

An important set of points in the CRP is the main diagonal from the left-bottom corner to the right-top corner (diagonal line in Figure 2). This diagonal, called the line-of-synchrony (LOS), reflects simultaneous recurrences, in our case, matches between client's and staff's nonverbal behaviour performed at the same point in time. That is, where they stared face-to-face and (probably) made eye contact or where one was talking while the other was silent and (probably) was listening. The number of recurrent points (i.e., black dots) on the LOS divided by the total number of points of the line (which equals the length of the time series) is equivalent to the percentage of synchrony (%Sync).

The correspondence between the LOS and the central-tendency measure %Sync nicely demonstrates the fact that the CRP contains much more information than merely an analysis

of matching actions at the same time. It offers a much broader quantification of the temporal pattern of nonverbal behaviour on all timescales during the conversation. We can inspect the relative number and distribution of matching and non-matching looking or talking behaviours as the client-staff interaction unfolds over time. In fact, RQA is the technique of extracting quantitative measures from CRPs (Zbilut & Webber, 1992). All these derived measures are based on the basic concept of a recurrent point, as explained above in the context of the present study. The most basic measure drawn from a CRP is the *global recurrence rate* (RR_{global}), being the proportion of black dots (i.e., recurrent points) in the CRP. For the entire CRP this crude measure represents the overall extent to which staff and clients are using matching nonverbal behaviours. In the following we will introduce several other measures based on the recurrence rate in a predefined area of the CRP, specifically located around the LOS.

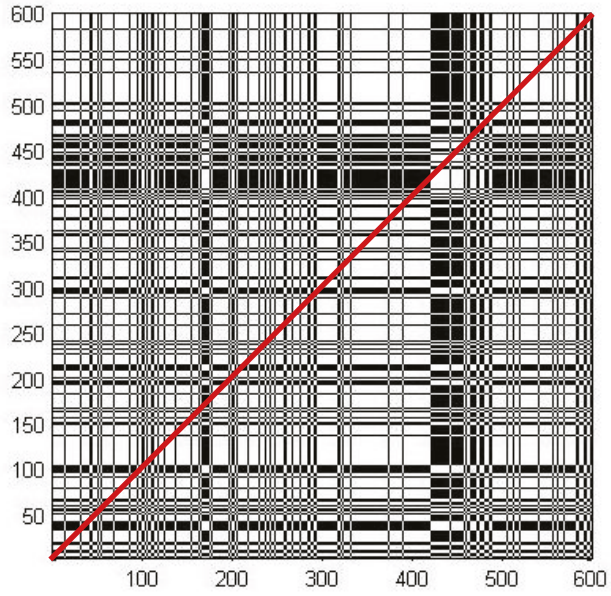


Figure 2. Example recurrence plot.

Black areas represent periods of one person talking matched by the other person being silent some time later or earlier, with respect to speech, or periods of one person looking at the other matched by the other looking back some time earlier or later, with respect to gaze. The white areas, on the other hand, represent periods of silence or talking of one matched before or after by silence or talking of the other (speech) or looking at the other that is not matched as well as both looking away (gaze). In this way the RP represents a raw structure that can capture the distributions of matching and non-matching non-verbal behaviour, together with when these are occurring in the conversations. The diagonal line is the line-of synchrony (LOS; see text).

Important issues discussed in the introduction with regard to nonverbal coordination are interlocutors' asymmetry and dominance during conversation. In order to quantify these aspects, a number of other recurrence-based quantities can be obtained by calculating the extent to which matching nonverbal behaviours occur in temporal proximity, rather than exactly at the same time (as with %Sync) or across the entire length of the sample (as with RR_{global}). Stated differently, it assesses whether and how much staff and client tend to match their nonverbal behaviours *around* the same time in the conversation. In other words, CRQA is the technique used to investigate the dynamic nature of interactional synchrony and the phases of coordinated gaze patterns and speech rhythms. Regular face-to-face conversations will most likely show more prominent matching of nonverbal behaviours within a (small) interval around the 'presence'. As a result, recurrence will be higher within some area or temporal band around the line of synchrony than at larger distances in the CRP. This can be quantified by focusing on the relative number of black dots around the LOS. This measures has been labelled the *diagonal recurrence rate* of width w ($RR_{diag,w}$; see Dale & Spivey, 2006), and is defined as the sum of black dots in the band of width w around the LOS, divided by the total number of dots (black plus white) in that particular area.

Of particular interest are the $RR_{diagline}$ of individual diagonal lines in the CRP, parallel to the LOS either (closely) above or below that line. In this study each single-step diagonal displacement of such a line away from the LOS represents a temporal shift of one second. This temporal shifting enables a direct comparison of the nonverbal behaviour of one of the interlocutors to that of the other interlocutor one or more seconds earlier or later in the conversation. The size of the shift specifies how temporally distant (i.e., how much earlier or later) in the conversation the behaviours occurred, and its directions determines which of the interlocutors is initiating a particular nonverbal behaviour. Specifically, when the client's nonverbal behaviour time series is represented along the horizontal axis of the CRP and that of the staff along the vertical axis (see Figure 2), the lower-right triangular area (below the LOS) holds the points where staff performs a particular behaviour first, whereas the upper-left triangular area (above the LOS) those where the client was first. As can be seen from inspection of the CRP, the black dots in these areas reflect that such behavioural initiatives of one were matched some time later by the other. The further away these dots are from the LOS the later this matching occurred. For instance for speech rhythm, the parallel diagonal line directly above the LOS holds all the black dots that reflect either talking or silence by the client that is matched exactly one second later by the staff member's silence or talking, respectively. This means that the $RR_{diagline}$ of this line quantifies the amount of recurrence with a one-second delay.

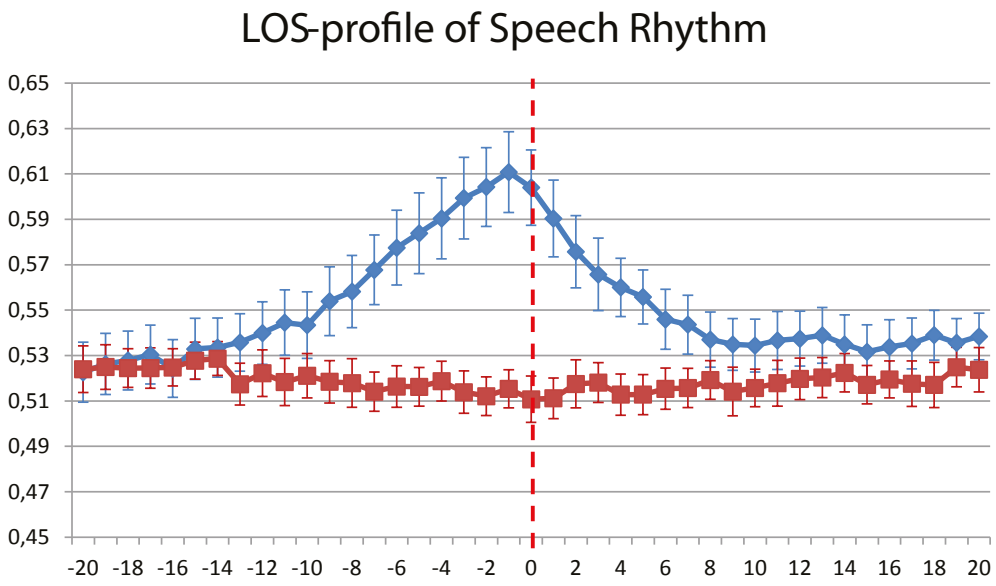


Figure 3. Example of the results of a LOS-profile analysis for speech synchrony.

The curve above (diamonds) shows the real-life conversation, whereas the curve below (squares) is the result of the LOS-profile analysis with shuffled time series. That is, with the temporal structure of the time series destroyed by the random re-distribution of the data points. The error bars reflect the standard errors of the mean for all conversations within each diagonal line.

Let us consider a collection of such individual diagonal lines, each with a successive 1-second parallel shift away from the LOS, 20 steps below and 20 steps above the LOS (i.e., $w = 20$), and calculate $RR_{diagline}$ for each of them. In Figure 3, these 40 individual single-line $RR_{diagline}$ values are aligned and drawn, together with the $RR_{diagline}$ of the LOS at '0' shift (which equals %Sync). This produces a so-called LOS-profile, which graphically represents the pattern of speech and gaze coordination.

Table 1. Recurrence-based measures and their description

Measure	Description
RR	Recurrence Rate, the proportion of recurrent (i.e., matching) points in the recurrence plot. For speech, *matching* was defined as one person talking while the other was silent; for gaze, it was defined as staring face-to-face.
%Sync	Percentage-of-Synchrony, the percentage of recurrent (i.e., matching) points on the Line-of-Synchrony (containing all matches and non-matches of non-verbal behaviours of client and staff performed at the same time). This measure equals the time interlocutors spend looking at each other, or turn-taking in speech divided by the total duration of the interaction.
RR_{peak}	RR_{peak} is the maximum recurrence value in the LOS-profile. For speech, this measure reflects the optimal point of interlocutors' tendency to be talkatively alternating.
RR_{reldif}	RR_{reldif} is the maximum recurrence value in the LOS-profile relative to the 'background' (i.e., shuffled) recurrence value in the LOS-profile.
τ peak	τ_{peak} is the temporal difference in seconds between the point where RR_{peak} is reached and the Line-of-Synchrony (= zero shift). This measure reflects the delay in optimal matching between interlocutors and informs about the response time of one interlocutor to the other.

From the LOS-profile, several interesting measures can be derived. First of all, as can be seen in Figure 3, the LOS-profile of a real-life conversation generally has a peak where the $RR_{diagline}$ obtains a maximal value, at some temporal shift around or on the LOS. This maximal value is labelled RR_{peak}, and provides a crude measure for the level of coordination between the two interlocutors. Secondly, the shift where this RR_{peak} is obtained is called τ_{peak}, and tells us about the delay in optimal matching between the interlocutors. Thirdly, the ratio between the total relative amount of recurrence in the LOS-profile on both sides of the LOS (i.e., the sum of RR_{diag}, which equals the area under the curve, left and right from 0 in Figure 3) is a sign of how strongly one of the interlocutors is dominating the conversation.

In order to answer the research questions, we will make use of the measures the global recurrence rate, the percentage of synchrony, and the RR peak to determine the degree of coordination between staff and clients. The degree of initiating or following the nonverbal behavior patterns by staff or clients will be determined by the τ_{peak}, and the difference between the total relative amounts of recurrence in the LOS-profile on both sides of the LOS. These measures will be correlated with the observed quality of the interactions. For an overview of the used CRQA measures see Table 1.

RESULTS

In this section we will answer the three research questions by using the CRQA measures described above. Prior to that the central-tendency measures and the observer ratings and the associations between the observer ratings and the central tendency measures will be presented. These data will be presented first in order to compare or associate them with CRQA measures.

Central-tendency measures, observer ratings, and their associations

Table 2 shows the descriptive statistics of the time series gaze direction and speech rhythm for staff and clients. Paired samples t tests showed a non-significant difference between the time clients and staff talked, $t(18) = .80$, $p = .44$). Staff, however, looked significantly more often at the client than vice versa, $t(18) = 4.25$, $p = .001$) The analyses on the central-tendency measures revealed significant differences between the interlocutors individually. For example, some staff and clients seemed more talkative than others. There were also significant differences between the interactional patterns pertaining to nonverbal behaviours. With respect to gaze direction, it appeared that in one interaction the two speakers looked at each other for about 70% of the time and in another interaction client and staff looked away from each other in 60% of the time. With respect to the speech rhythm, in one interaction almost 47% of the time there was total silence, whereas in another interaction staff and client talked at the same time in 26% of the time. This suggests that each interaction has its own nonverbal behavioural pattern. The observer ratings by staff and clients are described in Table 3.

Table 2. Mean (in percentages), Standard Deviations (SD), and Range for the Time Series of Gaze Direction and Speech Rhythm for Staff and Clients

Dyads interactions	*Mean*	*SD*	*Range*
Client talks, irrespective whether staff talks or not	44.2	14.2	20.2-66.6
Staff talks, irrespective whether the client talks or not	48.3	12.3	28-67.2
Staff and client both talk at the same time	15.7	5.3	8.8-26
Staff and client are silent at the same time	23.2	9.5	8.2-46.6
Staff or client talks, while the other is silent (% synchrony)	60.4	7.24	41.8- 70.1
Client looks at staff irrespective of staff's gaze direction	48.6	19.5	16.6-82.4
Client looks at staff, while staff looks elsewhere	12.1	5.2	4.3-20.9
Staff looks at client, irrespective of the client's gaze direction	66.2	16.8	24.8-89.2
Staff looks at client while client looks elsewhere	30.1	13.7	13.4-54.3
Staff and client both look elsewhere	20.6	16.1	3.2-60.9
Staff and client look at each other (% synchrony)	36.58	17.06	7.2-70.2

In order to find out whether staff and clients observer ratings are comparable we correlated their scores. Table 3 shows high correlations between the observed scores of staff and clients, with exception of the way staff discuss the items. These results indicate that staff and client observers have a tendency to evaluate the quality of the interactions between dyads in a similar way.

Table 3 shows that client observers were generally more positive in their evaluations of the interactions than staff. The difference between scores of staff observers and client observers was significant for the degree staff listen to clients, the way staff discuss the items, and the overall impression. Staff observers and client observers were most satisfied with the way staff listen to clients.

Next, the associations between the observer ratings and the central-tendency measures are presented in Table 4.

Table 3. Observer's Mean Scores (Min = 0. Max = 10), Standard Deviations (SD), Range of Staff-Client interactions and associations between staff scores and client scores

Question	Clients	Staff	*t*-value	*p*-value	*r*-value	*p*-value
Did staff listen to the client?						
M	7.9	6.9	3.3	.004	.54	.02
SD	.8	1.6				
Range	6.2 - 8.9	3 - 8.9				
Did the client want to talk about the items that were discussed?						
M	7.5	6.9	1.9	.071	.62	.01
SD	1.4	1.5				
Range	2.5 - 8.8	2.5 – 9.0				
Was the way staff discussed the items adequate?						
M	7.6	6.1	4.3	.001	.32	.18
SD	.86	1.5				
Range	6 - 9.1	2.9 - 8.2				
Overall Impression						
M	7.3	6	4	.001	.42	.07
SD	1.2	1.5				
Range	3.8-8.9	3.2-8.2				

Table 4. Pearson correlations between the Observer Ratings by Staff and Clients and the Central Tendency Measures on Speech Rhythm and Gaze Direction

	Both look at each other	Staff and client look elsewhere	Staff looks, client not	Client looks, staff not	Staff looks irrespective of the gaze direction of client	Client looks irrespective of the gaze direction staff	Staff and client talk	Staff and client are still	Staff talks client is silent	Client talks, staff is silent	Staff talks irrespective of the client talking or not	Client talks, irrespective of the staff talking or not
Relation observed by clients	.48*	-.53*	-.02	.12	.48*	.46	.14	-.28	.05	.11	.11	.15
Goal observed by clients	.45	-.31	-.32	.29	.2	.48*	.19	-.35	-.24	.43	-.15	.43
Method observed by clients	.49*	-.61**	.07	.11	.56*	.47*	.16	-.36	.13	.09	.19	.13
Overall impression observed by clients	.48*	-.41	-.29	.34	.27	.53*	.09	-.29	.02	.17	.06	.175
Relation observed by staff	.16	-.12	-.02	.11	.15	.14	.15	.03	-.5*	.41	-.42	.4
Goal observed by staff	.15	.02	-.3	.36	-.09	.2	.09	.02	-.54*	.48*	-.48*	.44
Method observed by staff	.04	-.08	.14	0.0	.15	-.01	.16	.06	-.43	.3	-.34	.32
Overall impression observed by staff	.11	-.08	.02	.07	.13	.08	.11	.11	-.36	.22	-.29	.23

** Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed).*

In general, Table 4 shows that staff do not appear to base their judgments of the quality of the interactions on the central-tendency measures of the gaze directions. Instead, staff's judgments about the quality of the interactions are associated with measures of speaking or remaining silent. Staff observers believe that when staff are talking more, clients are less willing to talk about the subjects being discussed. They also believe that when staff talk more they have a tendency to listen less to clients. Noticeable is the fact that no associations were found between the observer ratings of clients and the results of the central-tendency measures for speech rhythms. This suggests that clients were not sensitive to quantitative measures of talking and remaining silent. Table 4 also shows that clients were relatively more sensitive to quantitative measures of gaze direction than staff. The results of the associations between observer ratings and central-tendency measures indicate that clients and staff were sensitive to different aspects of nonverbal behaviour.

Clients were more sensitive to making eye contact, whereas staff were slightly more sensitive to the amount staff and clients talk. These findings will be compared to the results based on the CRQA, described next.

As discussed earlier, CRQA can reveal underlying dynamical patterns not visible in central-tendency measures. Table 5 presents *Mean* scores, *SDs* and Ranges for the CRQA measures of the staff-client interactions. As for the gaze direction, the only significant measures were the RRglobal and the % of Synchrony. This means that with respect to the gaze direction no optimal attunement (or peak) was found and therefore these data are missing. In the following part we will explain what these results mean in terms of our research questions on coordination and initiating/leading or following nonverbal behaviour patterns. Next, we will present the results of the three research questions.

Table 5. Mean Scores in %, Standard Deviations (SD), and Range for the CRQA measures of the staff-client interactions

CRQA measure	*Mean*	*SD*	*Range*
Gaze direction			
Global Recurrence Rate	32	19	04 - 69
Line of Synchrony (LOS)	07	17	07 - 52
Speech rhythms			
Global Recurrence Rate	51	04	43 - 58
Line of Synchrony	60	07	42 - 70
Recurrence Rate Peak or RR_{Peak}	67	04	58 - 74
τ_{peak} in sec.	-3.38	5.44	-19 - 3
Recurrence Rate around the Line of Synchrony (LOS)	55	0	40 - 62
Difference between total relative amount of recurrence in the LOS-profile on both sides of the LOS	.83	3.6	-6.9 – 7.6

What kind of attunement and synchronization (i.e. coordination) occurs between staff and clients in their gaze directions and speech rhythms?

As described in the analysis section, a crude measure for coordination is 1) the global recurrence rate, which represents the overall extent to which staff and clients are using matching nonverbal behaviours, and 2) the percentage of synchrony, which represents the overall extent to which matching behaviours occur exactly at the same time. The average percentage that staff and client look at each other is 37%, but the ranges show that there is a huge variety among the interactions. In some interactions people look at each other only 7% of the time and in another interaction 70% of the time. Because the analysis was based on four options for gaze direction, (i.e., staff looks at client, client looks at staff, both look at each other, both look elsewhere) statistically there is a 25% chance that communicative partners look at each other. As a paired samples t-test shows, 37% is significantly larger than 25% (t (18) = 2.9, p = .01) and therefore it is plausible to conclude that gaze directions are synchronized.

However, based on the central tendencies (Table 2), we see that on average staff look at clients 66.2% of the time and clients look at staff at 48.6 % of the time. The chance that staff and clients look at each other within these interactions is 66.2% * 48.6% = 33.2%. Figure 4 shows an example of the results of a LOS-profile analysis for gaze synchrony.

The upper curve (diamonds) shows the real-life conversation, whereas the lower curve (squares) is the result of the LOS-profile analysis with shuffled time series. That is, with the temporal structure of the time series destroyed by the random re-distribution of the data points.

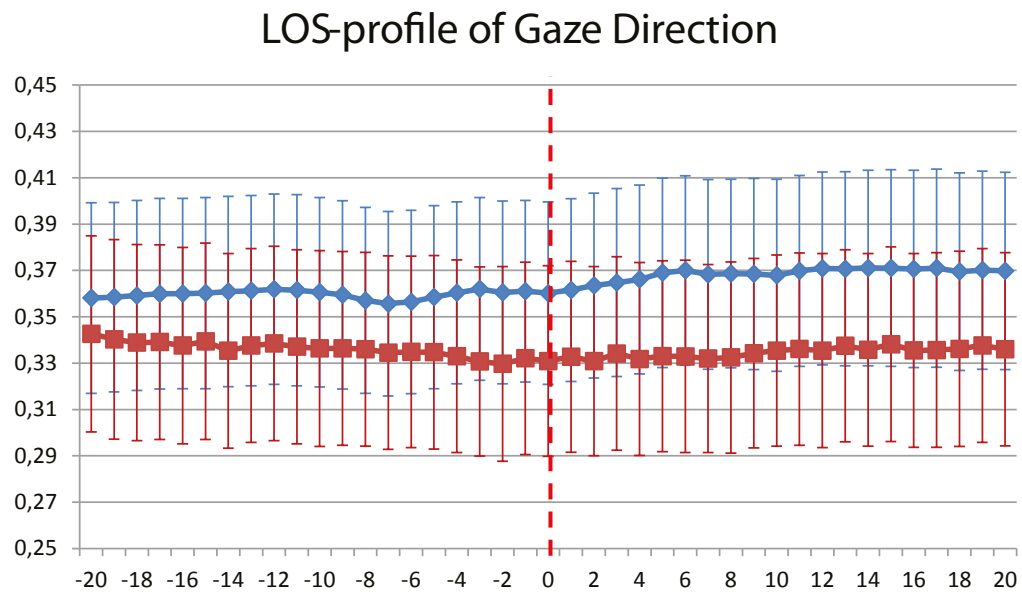
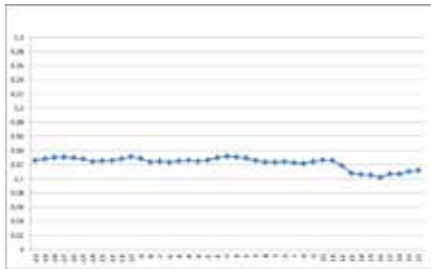


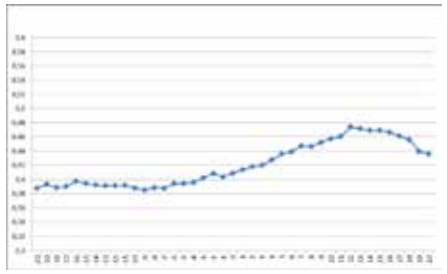
Figure 4. Example of the results of a LOS-profile analysis for gaze direction.

The curve above (diamonds) shows the real-life conversation, whereas the curve below (squares) is the result of the LOS-profile analysis with shuffled time series. That is, with the temporal structure of the time series destroyed by the random re-distribution of the data points. The error bars reflect the standard errors of the mean for all conversations within each diagonal line.

As Figure 4 shows, the real-life data of the gaze patterns in general does not significantly distinguish themselves from the shuffled data. Therefore it is justified to conclude that although staff and clients look at each other more often than statistically could be expected, on average there seems to be no coordination of gaze patterns. However, as stated, there exists a wide variety among the individual interactional patterns. In a few interactions we did find a RR_{peak} for gaze patterns, which represents a maximal level at which the gaze patterns were synchronized. Figure 5A shows an example of an interaction in which the gaze patterns were not coordinated and Figure 5B shows an example of an interaction in which the gaze patterns were coordinated.



5A



5B

Figures 5A and B. Two examples of individual LOS-profiles for gaze direction.
A representing a dyad in which no coordination of gaze directions has been found and B representing a dyad in which coordination of gaze directions has been found.

The mean recurrence rate of the speech rhythm, that is, the global percentage of one interlocutor speaking while the other is silent is 51% (Table 5: Global Recurrence Rate speech rhythm) and the average percentage that this matching behaviour occurs at the same time is 60% (Table 5: Line of Synchrony speech rhythm). The average recurrence rate of matching speech rhythms around the line of synchrony is 55% (see Table 5). Here also, the ranges show a huge variety among the nineteen social interactions. Statistically speaking, matching behaviours (one speaking, while the other is silent) occur on average 50% of the time (two of the four combinations), the recurrence rates generally do not give distinctive information in terms of coordination. Therefore another measure, the RR_{Peak} must be considered. The RR_{peak} is the maximum value (Mean = 67%, ranges 58%-74%) in which matching behaviours occur. That is, staff and clients matched their turn to speak or to keep silent in response to one another given a certain time delay (τ_{peak}, see below), about 67% of their conversation. The existence of this peak, which is absent for the gaze direction, means that clients' and staff's speech rhythms were synchronized. Figure 6 shows an example of a LOS-profile in which the RR_{peak} of speech patterns reached a maximum value of 74%.

The results of the attunement and synchronization of the staff and clients' nonverbal behaviours revealed that their speech rhythms are generally more coordinated and synchronized than their gaze directions.

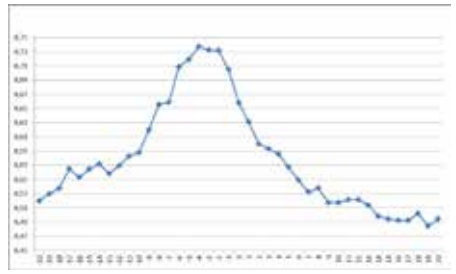


Figure 6. An example of an individual LOS-profile for speech synchrony

What is the pattern of dominance in the dialogue, in relation to interlocutors initiating nonverbal behaviours such as gaze direction or following the other's lead?

In this section we will describe two variables that quantify the balance of the interaction in terms of initiating/leading or following nonverbal behaviour of the other. As said, no significant results were found for gaze direction. We can, therefore, only present the results for the speech rhythms. The first variable is the τ_{peak}, which is the shift where the RRpeak is obtained, and it tells us about the delay in optimal matching between the interlocutors. In other words, this variable gives us information on the response time of one interlocutor to the other. The mean τ_{peak} is -3.38, which means that staff generally react about 3.5 seconds later to the nonverbal behaviour of the client than the client does. For example, it might take staff 3.5 seconds longer to become silent when a client starts talking than a client needs to become silent when staff starts talking. It appears that in 12 of the 16 interactions (the first three interactions did not have a peak), staff have a longer response time than clients ($\tau_{peak} < 0$), indicating that in these interactions staff are more dominant and leading the conversation nonverbally. There is a wide variety in the interactions for τ_{peak} and one interaction shows that staff responded to the client with a delay of 19 seconds.

The second variable is the difference between the total relative amount of recurrence in the LOS-profile on both sides of the LOS (i.e., the sum of RR_{diag}, which equals the area under the curve, left and right from 0 in Figure 3) and is a sign of how strongly one of the interlocutors is dominating the conversation. The mean value of the difference between staff and clients initiating speech rhythm is 0.83%, which means that interactions are rather balanced in terms of initiating or following one another's speech rhythms. The ranges show a wide variety from -6.9%-7.6%, which means that in the most unbalanced interaction in terms of initiating or following the speech rhythm, staff initiated the speech rhythms 7.6% more often than the client. In another interaction the client initiated the speech rhythms 6.9% more often

than staff. Analysis revealed that in thirteen of the nineteen interactions staff are dominant, indicating that staff initiate the speech rhythms more often than clients.

Are key elements of staff and clients' coded nonverbal behaviour (levels of attunement and dominance) associated with observer ratings of the quality of the interactions?

These findings indicate whether the observers' judgments about the quality of the interactions are associated with the synchronization of nonverbal behaviours in the interactions. The results are presented in Table 6.

As Table 6 shows there are associations between the observer ratings of clients and the RR_{peak} of the speech rhythms. The RR_{peak} can be viewed as a measure of fine-tuning. The better staff and clients are attuned to each other when it comes to on-off vocal activity, the more clients believe that staff are actually listening; the higher clients value the way staff discuss the topics the better the overall impression of observer clients on the interaction. Noticeable is the fact that no associations have been found between observer ratings of staff and the RR_{peak} of speech rhythms, or between the other CRQA based measures. This suggests that staff were less sensitive to the coordination of staff and clients when it comes to taking turns in speaking. Staff were also less sensitive to the synchronization of the gaze direction than clients. Table 6 reveals that clients were sensitive to the percentage staff and clients look at each other at the same time: A positive association was found by the percentage of synchrony of gaze direction and the overall impression of the interactions rated by clients.

In fact, staff observers appear to be more sensitive to the difference in dominance between staff and clients in terms of initiating or following the speech rhythms (recall, data of the gaze direction were absent). Staff observers believed that staff listen better to the client when the client initiated the speech patterns more often, for example to start or stop talking. These findings are in line with the negative association between staff talking and staff's observer ratings on the willingness of the client to discuss the items (goals and subject) and a positive association between clients' talking and staff's observer ratings on the willingness of the client to discuss the items (goals and subject). Noticeable is the fact that neither clients nor staff based their ratings on the delay in the optimal matching between the interlocutors.

The results of the last research question are in line with the results found with the central-tendency measures. Staff and clients based their judgments of the quality of the interactions on different aspects of the interaction. Clients were more sensitive to coordination and fine-tuning for both speech rhythms and gaze directions. Staff were more sensitive to the quantitative dominance in speech rhythms.

Table 6. Pearson correlations between CRQA Measures and Observer Rating

	RR Gaze patterns	% Synchrony of gaze direction	RR speech rhythms	% Synchrony of speech patterns	RR client – RR staff speech patterns	RR peak speech rhythm	RR relative difference peak speech patterns	τ peak speech patterns
Relation observed by clients	.37	.41	.15	.32	.31	**.68****	.46	-.23
Goal observed by clients	.37	.45	-.09	.31	.24	**.57***	.08	-.12
Method observed by clients	.4	.43	.21	.4	.4	**.7****	.45	-.23
Overall impression observed by clients	.42	**.47***	.03	.31	.26	**.61***	.3	0
Relation observed by staff	.05	.1	-.19	-.12	.34	.07	-.28	-.46
Goal observed by staff	.04	.15	-.25	-.1	.18	-.12	-.47	-.36
Method observed by staff	-.06	-.04	-.18	-.17	.26	.2	-.17	-.42
Overall impression observed by staff	-.01	.03	-.13	-.18	.2	.22	-.1	-.42

**Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed).*

Discussion

In the present study, the attunement and synchronization of staff-client interactions were examined. The results of the interactional analysis found in this study demonstrated that staff's and clients' speech rhythms are coordinated. With respect to the gaze directions, staff and clients did not reach an optimal point at which the respective tendencies to look at each other were attuned. This so called RR_{peak} for gaze directions was found in other studies by Richardson et al. (Richardson & Dale, 2005, see also Richardson et al. 2007). They found that the eye movements of interlocutors were coupled during discourse and that this reflected the success of their communication. Richardson and Dale (2005), however, studied the synchronization of gaze patterns while interlocutors were staring at a visual display, whereas in our study we investigated the gaze patterns during face-to-face interactions. The absence of the RR_{peak} for gaze directions in this study may be explained by the fact that clients look significantly less often at staff than vice versa. There is no clear explanation as to why clients have a tendency to look away more often than staff. Several studies indicated that looking away is, among other functions, an indication of planning utterances or concentrating on complex cognitive tasks (Argyle & Cook, 1976; Novick, Hansen, & Ward, 1996).

This raises questions on the level of the cognitive load of the interactions for clients. Recent research on the coordination of gaze patterns has demonstrated that gaze patterns embody the joint understanding involved in communication (Shockley et al., 2009). For example, more shared knowledge between two individuals results in a convergence of their patterns of gaze (Richardson et al., 2007).

Studies on communication between staff and clients have emphasized the mismatch between the complexity of staff communication and the level of understanding of clients with ID (Bartlett & Bunning, 1997; Bradshaw, 2001; McConkey et al., 1999; Zilber et al., 1994). Another function of looking at the other is to signal attention and interest. If staff looked significantly more often at clients then it appears that clients are less involved in the interactions. When clients are less involved in the interactions, this may be an indication of the fact that they want to talk about something else. Thus, a possible interpretation is that this pattern of gaze reflects a tension between the clients and staff members, because they want to talk about different topics or did not appreciate the direction in which the conversation was going.

Future research could tap into the perceptions of both staff and clients on what they want to achieve or talk about during social interactions (Duchan, 1986).

There are, however, other explanations for this gaze pattern during interactions. Schmidt and O'Brien (1998) suggested that staff might look longer to indicate to their hesitant conversational partner that they are available for communication. It may also be that some clients look away more often because of inter-personal sensitivity or difficulties. It is known that people with Autistic Spectrum Disorder have difficulty maintaining eye contact. More studies revealed that interactional synchrony breaks down when people have particular social-cognitive deficits such as autism (Isenhower et al., 2012; Trevarthen & Daniel, 2005).

The notion that clients prefer to avoid the gaze of staff was not confirmed by the client observers who were asked to observe the videos of the interactions and rate their quality. These client observers evaluated the quality of the interactions more positively when staff and clients looked at each other more often and when their gazes were better synchronized. However, there was no association between staff ratings of the interactions and the synchrony between staff's and clients' eye contact.

With respect to speech rhythms, coordination was found between staff and clients based on the RR_{peak}. Staff and clients generally reached an optimal point at which their tendencies to be talkative alternate, resulting in fewer moments of talking across one another and silent pauses. These findings are consistent with the mutual entrainment of speech rhythms found in other studies, for example in studies on conversations between psychology students (McGarva & Warner, 2003). This suggests that staff and client interactions do not differ from other conversations in terms of coordinating vocal activity. Garva and Warner also found that mutual entrainment of speech rhythms were not associated with observer ratings of conversation quality.

In the present study, we found that mutual entrainment of speech rhythms did not affect ratings of conversation quality evaluated by staff observers, but did affect the ratings of conversation quality evaluated by client observers, suggesting that this is an aspect of the underlying dynamics of nonverbal behaviour that the clients were sensitive to. This is an important finding because it demonstrates the ability of people with intellectual disabilities to detect implicit social cues. Note that, staff observers were sensitive to how much the staff members in the interactions dominated the talk. The more staff in the interactions talked, the lower the quality rating of the interaction. The more the clients talked, the more positively the staff observers rated the interactions. It is possible that staff view clients talking more as evidence of empowerment or successful client centred approaches. This contrasts with the more nuanced nonverbal dynamical patterns that reflect greater mutuality between the staff and clients and raises an important question about staff's and clients' different perceptions about what constitutes a desirable interaction with one another. Staff may be focusing on the verbal aspects of communication and helping clients to have their say, at the expense of trying to achieve a proper mutual exchange underpinned by a synchrony of nonverbal behaviours. Thus, staff might indeed be helping people to have a say but this may sometimes be at the expense of achieving a proper rapport. In other words, staff may be making a conscious effort to be person centred and, in doing so, override their tacit inter-personal skills that allow nonverbal behaviours to be synchronized. This has important implications for staff training and recognizing that a focus on verbal behaviour alone might not be sufficient for client to feel that they are afforded a proper role in the interaction.

The second research question was whether clients or staff dominated the interactions in terms of initiating/leading through specific nonverbal behaviours. No clear results were found for gaze directions. However, for speech rhythms it appeared that staff led in 13 of the 19 interactions. This means that in general, staff initiated the nonverbal elements of behaviour more often and clients followed the staff initiatives. Moreover, when clients initiate the interaction, staff generally took significantly longer to follow their lead than it took for clients to follow staff. These findings are in line with the finding that the relationship between staff and clients is generally unbalanced: The client needs support and the professional is expected to have the knowledge, skills, and attitude to provide this. As imitation of socially dominant individuals is likely (van Baaren, Janssen, Chartrand, & Dijksterhuis, 2009) and synchronization shares features with imitation, any asymmetry in roles should bring an asymmetry in synchrony (Louwerse et al., 2012).

These findings also imply that the CRQA measures can provide information that is not visible in central-tendency measures, where no difference was found between quantitative dominance of how long staff and clients spoke for. Although staff initiate speech rhythms more often than clients, the difference between staff and clients initiating the speech rhythms was relatively small (M = 0.83%, SD = 3.6%). This suggests that staff-client interactions are fairly balanced in terms of leading or following nonverbal behaviour. These findings correspond with the balance in staff-client interactions in terms of power distribution pertaining to verbal behaviour found in a study by Reuzel et al. (2012). Client observers were not sensitive to the balance in the interactions in terms of initiating or following nonverbal behaviour, but staff observers thought that staff listened better to clients when the clients initiated the speech rhythms more often.

The CRQA-based measures used in this study are promising with respect to understanding interactions as a mutual process in terms of coordinating and leading or following a dialogue. However, care needs to be taken in the interpretation of the nonverbal patterns found in this research. Although the association found between clients' ratings of the quality of the interactions and the coordination of speech patterns is remarkable, we do not know

the precise role or function of the synchronization in staff-client social interactions. To understand what the patterns of speech rhythms and gaze directions actually mean, it is necessary to link the analysis more closely to an analysis of verbal behaviour (e.g., Linell et al., 1988), and examine the patterns in the context of the daily interactions between staff and clients. Therefore, further investigation is needed about what clients and staff find important about their collaborative relationship.

The results of this study show that staff and clients have a tendency to look at different aspects of an interaction. In general, staff are sensitive to balance in an interaction in terms of quantitative measures of talking and initiating or following the speech rhythms. Clients are sensitive to a finer level of attunement: speech rhythms and the amount of eye contact. The presence of these underlying dynamics in nonverbal patterns as revealed by CRQA and the fact that clients are sensitive to it provides valuable information on the relevancy of nonverbal aspects of an interaction according to clients. This is because better attunement between staff and clients can ultimately help to achieve mutual understanding and empower the client in the relationship.

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CHAPTER 4

VERBAL INTERACTIONAL DOMINANCE AND COORDINATIVE STRUCTURE OF SPEECH RHYTHMS OF STAFF AND CLIENTS WITH AN INTELLECTUAL DISABILITY

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ABSTRACT

Social interactions between staff and clients with an intellectual disability contain synchronized turn-taking patterns. Synchrony can increase rapport and cooperation between individuals. This study investigated whether verbal interactional dominance and balance, an indication of attunement between staff and clients with ID, are associated with synchrony of turn-taking patterns during staff-client interactions and whether the level of dominance and balance is related to the observed quality of the social interactions. Nineteen staff members video-recorded a social interaction with one of their clients in which the client asked for support. The recordings were analyzed using Cross Recurrence Quantification Analysis and Initiative Response Analysis. Fifteen staff observers as well as client observers completed a questionnaire on the quality of the video-recorded interactions. Staff and clients' patterns of verbal interactional dominance and balance were associated with the synchrony of their turn-taking behaviors. Staff's dominance was associated with a higher level of synchrony of turn taking, whereas client's dominance was associated with a lower level of synchrony. The patterns of verbal interactional dominance and balance were associated with staff observer reports about the quality of the interactions. The study suggested that staff and clients have a tendency to be sensitive to different aspects of interactions, which in turn may have different functions.

Key words

staff-client interactions, intellectual disabilities, social interactions, non-verbal communication, synchronization, dominance, recurrence analysis

INTRODUCTION

The past decade has seen an increase in the use of nonlinear approaches towards the dynamics of interpersonal communication (e.g., Guastello, Pincus, & Gunderson, 2006; Lumsden, Miles, Richardson, Smith, & Macrae, 2012; Pincus, 2001; Pincus & Guastello, 2005; Pincus, Ortega, & Metten, 2010; Richardson, Dale, & Kirkham, 2007; Steenbeek & van Geert, 2007; Stevens, Gorman, Amazeen, Likens, & Galloway, 2013; Vallacher, Nowak, & Zochowski, 2005). The general focus of these studies is interpersonal synchronization of two or more people engaging in a (social) task. Synchronization is a pervasive phenomenon that usually occurs spontaneously and unintentionally during an interaction.

Conversely, it has been argued that attunement and synchrony are necessary prerequisites for communication (Condon & Sander, 1974; Kendon, 1970). When two people are working toward the same goal, their joint activity is coordinated (Louwerse, Dale, Bard, & Jeuniaux, 2012), and each person's nuanced actions shape the other's actions as the interaction unfolds resulting in dynamic synchronization (Stevens et al., 2013) For example, when two people talk, they spontaneously converge in terms of pausing and speaking duration, speaking rate, turn duration, response latency, vocal intensity, and accent. Movements and postures, likewise appear to be spontaneously coordinated with speech within and across individuals (for a review, see Fowler, Richardson, Marsh, & Shockley, 2008). In the case of human communication, synchronization has been observed as a pattern of verbal exchanges between a therapist and a patient (Hartkamp & Schmitz, 1999), among members of a therapy group (Pincus & Guastello, 2005), and among family members who may be in a state of conflict (Pincus, 2001). Louwerse et al. (2012) found that synchrony happens across a range of non-verbal behaviours, including gestures and smiling. Hove and Risen (2009) highlighted the relationship between synchrony and social affiliation, with each enhancing the other.

In a recent study by Reuzel et al. (2013), the level of attunement and synchrony of non-verbal behaviour between clients with an intellectual disability and staff was correlated with the perceived quality of the interactions by independent staff and client-observers. The synchronization of turn-taking behaviour found in this study showed that staff and clients reached an optimal point at which their tendencies to be talkative alternate, resulting in fewer interruptions and silent pauses. This optimum is a measure for the level of attunement and was absent for gaze direction. The level of synchronization and attunement was linked with the quality of the interaction, but only for client ratings. This suggests that clients are sensitive to the underlying dynamics that occur during social interactions.

This important finding contributes to the literature on interactions between staff and clients with an intellectual ability revealing the difficulties staff and clients may face establishing a collaborative relationship. For example, Antaki and Rapley's (1996) sophisticated investigations of interactions between psychologists and people with intellectual disabilities have shown how views can be distorted or ignored by dominant communicative partners.

Recent studies have also indicated that staff tend to favour the use of directives and questions and may fail to adjust their language to the client's level of understanding (Jingree, Finlay, & Antaki, 2006). Hence, clients seem to be presented with few opportunities to engage as equal partners in conversational interchanges (Leudar, 1981; McConkey, Morris, & Purcell, 1999).

The purpose of services for people with intellectual disabilities is to improve people's lives (Bellamy, Newton, LeBaron, & Horner, 1990). The core quality of life domains, such as interpersonal relationships, personal development, self-determination, autonomy, and the emotional wellbeing of people with ID directly depend on what happens in the interaction between staff and clients (Schalock, 2004). In this context, interactions between staff and clients with an intellectual disability are crucial for the services' success in meeting people's needs (Social Exclusion Unit 2005, p. 57).

Despite the broad range of studies focusing on staff and client behaviours during their interactions, there seems to be a paucity examining interactional patterns between clients with intellectual disabilities and staff. Recent studies of Reuzel et al., (2012, 2013), however, investigated the attunement of staff and clients on both a content and on a process level. At the content level, staff and clients must reach a mutual understanding and common ground of what is said. At the process level, staff and clients are able to accurately predict the beginnings and endings of turns. By accurately projecting the ending of the speaker's turn, the listener can begin his turn using correct timing, allowing the conversational partners to achieve synchrony (Delaherche et al., 2012).

In their first study examining interactional patterns between staff and clients with ID on a content level, Reuzel et al. (2012) found that interactions between staff and clients were rather balanced in terms of power distribution, but that each party tended to use different verbal strategies to influence the conversation. Staff asked more direct questions and sometimes neglected meaningful client contributions. Clients, on the other hand, provided more extended turns in response to staff members' questions, thereby helping to maintain the dialogue. However, in a notable minority of communicative turns, the clients failed to link with the staff member's contribution and persisted with their own monologues. The interactional patterns found in this study suggest that staff and clients can face difficulties establishing collaborative dialogues on shared topics. To obtain a more complete understanding of the dynamic nature of staff-client interaction, the same authors went onto examine nonverbal cues (Reuzel et al., 2013).

In their second study, Reuzel et al. (2013) examined interactional patterns between staff and clients with ID on a process level. More specifically, the attunement and synchronization of two specific non-verbal behaviours, namely gaze direction and turn-taking behaviour were explored. The non-verbal interactional patterns found in this study showed that staff and client's turn-taking behaviour are synchronized.

Reuzel et al.'s (2012, 2103) studies on both verbal and non-verbal interactional patterns between staff and clients with intellectual disabilities provided insight in their responsiveness and attunement towards each other. However, little is known about the relationships between the verbal patterns when clients and staff interact and the coordination of their non-verbal behaviour (Richardson, Marsh, & Schmidt, 2005; Shockley, Richardson, & Dale, 2009).

For a better grasp of the dynamics of client-staff conversations, it would be helpful to capture the extent to which attunement, with respect to the content of the interaction, is associated with attunement with respect to process. In other words, if staff and clients manage to achieve a shared focus on a particular topic, do they also synchronize their behaviour, in terms of the timing of their verbal contributions and turn taking (Delaherche et al., 2012)?

For example, dominance on a content level has been shown to influence the way that people speak and gesture to each other during conversation (Ashenfelter et al., 2009; Rotondo, 2000; Weatherall, 2002). Louwerse et al. (2012) found that the person dominating the conversation is also likely to take a non-verbal lead, with their conversational partner following their initiatives. Pincus and Guastello (2005) found that relative control among members of a small group contributed to observed coherence in response patterns as they unfold over time.

Therefore the present study explores whether dominance of staff and clients during social interactions is associated with synchronization of their turn-taking behaviour. Since Reuzel et al. (2013) found that the synchrony of turn-taking behaviour was associated with the perceived quality of staff-client interactions, when rated by independent client observers but not by independent staff observers, staff and clients may be sensitive to different aspects of an interaction. Therefore, it is relevant to examine whether independent client and staff observers are sensitive to the balance of verbal contributions in staff-client interactions.

In the present article, the results of the two previous studies by Reuzel et al. (2012, 2013) discussed above will be combined to answer two specific new research questions:

1. Is interactional balance in terms of dominating or being controlled during staff-client social interactions associated with attunement of turn-taking behaviour?

2. Is interactional balance associated with the experienced quality of the social interactions?

Determining the structure of association between these verbal and non-verbal behaviours will give us more insight into staff-client interactions, which will be useful for clinical practice. The patterns of dominance will be captured by the initiative response analysis designed by Linell, Gustavsson, and Juvonen, (1988; see method section). Cross Recurrence Quantification Analysis (CRQA) will be used to explore the dynamical patterns of speech rhythms (for a overview of CRQA and related methods, see Marwan, Romano, Thiel & Kurths, 2007). CRQA is a nonlinear time-series method that quantifies how two observed processes unfold as originating from a single, shared process over time (Shockley, Butwill, Zbilut & Webber, 2002; Zbilut, Giuliani & Webber, 1998). CRQA produces measures reflecting coordination, such as how often two time series reflect each other's states, at all time scales (Shockley et al., 2009). Several studies have used nonlinear time-series analysis and modelling techniques, because these are indispensable for detecting coordination and synchronization between individuals (e.g., Pincus, 2001; Steenbeek & Van Geert, 2007). The specific method applied in the present study (CRQA) is by no means the only appropriate one. Others approaches have included fractal dimensions, Lyapunov exponents and entropy measures (e.g., Pincus & Guastello, 2005).

As is true for most of the nonlinear time-series techniques, a benefit of CRQA is its resistance to noise and freedom from assumptions. These features make it well suited for studying noisy behavioural signals generated during naturalistic interaction. Another advantage is that CRQA can be used for (ordered) categorical data, which is the case in the present study. In recent years several studies that made use of this technique have appeared in the behavioural science literature, and prove its broad applicability and its power to produce interesting results (Cox & Van Dijk, 2013; Dale & Spivey 2006; De Graag, Cox, Hasselman, Jansen & De Weerth, 2012; Louwerse et al., 2012; Lichtwarck-Aschoff, Hasselman, Cox, Pepler, & Granic, 2012; Orsucci, Walter, Giuliani, Webber, & Zbilut (1999); Wijnants, Hasselman, Cox, Bosman, & Van Orden, 2012).

METHOD

Participants

Staff

Nineteen staff members (3 men and 16 women) working at the JP van den Bent foundation in the Netherlands, a foundation that provides services to people with an intellectual disability, participated in this study. Staff provide support to clients with an intellectual disability in several domains of their daily lives, such as, providing help with care or household activities, helping clients plan activities and training practical and social skills. In order to determine the support needed, staff and clients agree on a support action plan, which can be viewed as a contract in which the support needed has been described as well as how the support should be provided. Most staff members (n = 13) worked in community-based residential houses, three worked in outreach care, and three worked in crisis care. Their mean experience of working in services for people with an intellectual disability was 7.1 years (*Range* = 1 to 27 years).

Clients

Each staff member was asked to select a client with whom they worked frequently, or who they met with at least once a week. The level of the clients' cognitive functioning was assessed by means of the Wechsler Adult Intelligence Scale (WAIS-3). Severity of cognitive disability ranged from mild (8) to borderline intellectual functioning (11). There were no obvious communication problems, that is, clients had sufficient verbal ability to express their thoughts and feelings. Clients' chronological ages ranged from 18 to 39 years (M = 25.1 years; SD = 6.1). Seven of the clients were male and twelve were female, and they all lived in community care settings and received support from services; three clients lived alone in their own apartment with outreach care, and seven lived alone or with a partner with 24 hours support available; six clients lived in staffed houses for training purposes, and three clients lived in staffed houses temporarily (crisis care).

Independent Raters

Fourteen staff members and fourteen clients with an intellectual disability observed the nineteen interactions on video. Staff and clients worked or lived in crisis care and were unfamiliar with the staff and clients shown on the video recordings. The mean age of staff was 32.4 years and ranged from 20 to 52 years. Eleven staff members were female and three were male. Clients' ages ranged from 18 to 59 years (M = 26.9 years). Six of the clients were male and eight were female. The severity of their intellectual disability ranged from mild (6) to borderline intellectual functioning (8). All clients had good expressive and receptive verbal skills.

Procedure

For the selection of participants, the researcher first obtained permission from the organization to conduct the research. Managers and psychologists were provided with information about the purpose of the study. All participants volunteered for the study and received an explanation of its purpose and what would happen. Written consent was received from the participants. The researcher contacted each staff member to explain the main goals of the study.

Participating staff video recorded a regular conversation, which had already been scheduled with a client in his or her home. They were asked to put the portable camcorder in a corner of the room, in order to be unobtrusive and keep the situation as normal as possible. The interactions were required to meet the following criteria: 1) the topic concerned an aspect of the participants' support needs, and 2) it was a type of interaction that occurred on a regular basis, at least once a week. The average length of the video recordings was 14.6 minutes (SD = 6.2, *Range* = 7.2 to 29.7 minutes). No instructions were given to the participants other than to interact as usual.

Ten different types of topics were discussed: 1) establishing or refining a support action plan (n = 5), 2) planning or evaluating client goals (n = 1), 3) planning household activities (n = 4), 4) planning other activities like a schedule for the week or a visit to the doctor (n = 3), 5) discussing leisure opportunities (n = 2), 6) planning finances (n = 5), 7) reviewing clients' work situation (n = 2), 8) discussing parenting problems (n = 1), 9) coping with inter-personal conflicts (n = 6) and 10) finding solutions for a range of other problems faced by the clients (n = 3). All the topics of conversation required both clients and staff to listen actively to each other in order to achieve a shared view about how to tackle the issue being discussed.

All videotapes were then transferred into 'the observer XT'. The observer XT is professional event-logging software that can be used for the collection, analysis, and presentation of observational data and is developed by Noldus (2009). All video recordings were analysed using the method of coding dialogue developed by Linell et al. (1988; see below) and using cross recurrence quantification analysis.

Next, 14 independent staff members and 14 clients with an intellectual disability observed the nineteen video-recorded interactions. After each video fragment they completed a short questionnaire derived from the Session Rating Scale (SRS) for staff and the Mentally Disabled Session Rating Scale (MSRS) for clients from Duncan, Miller and Sparks (2004) resulting in four items to evaluate each dyad:

- *The relation:* Did staff listen to the client?
- *Goals and subject:* Did the client want to talk about the topics that were discussed?
- *Method:* Did the staff discuss the topics adequately?
- *Overall:* What was the overall impression of the interaction?

The questionnaire for clients was adjusted in consultation with four individuals with intellectual disability who did not participate in the observations. The language used was changed to make the items more understandable and questions about emotions were added. After each question, the observer placed a dot on a 10 cm long line; the further they placed the dot to the right, the more positively the item was evaluated. Before staff and clients started the observations they practiced the questionnaire with two example video fragments of dyads that were not included in the study. The researcher, who did not know the observers, explained the items and made sure all participants understood what was being asked. The items were read out by the researcher and the questionnaires were then filled in anonymously and in silence.

Data analyses

Initiative Response Analysis

This analysis aims to capture dominance and coherence in dialogue. Interactional dominance includes the communicative actions, initiatives, and responses taken by the interlocutors. The dominant party is the one who manages to direct and control the other party's actions to the greatest extent and who also avoids being directed and controlled in her or his own interactive behaviour. Coherence is created by communicative actions that are relevant to and link-up with the preceding discourse.[1]

According to Linell et al. (1988) an 'ideal dialogue' includes the following conditions:

- Condition 1: It is locally coherent, in that interlocutors try to say things that are relevant to and cohere with the current topic.
- Condition 2: Conversationalists are mutually responsive, in that each of them links up with what the interlocutor has just said.
- Condition 3: It is progressive, in that interlocutors try to contribute the progression of the discourse by providing new material.
- Condition 4: It is coherent, in that interlocutors stick to the main content of the discourse.
- Condition 5: It is non-imposing, in that interlocutors refrain from imposing strong restrictions on the partner's responses.
- Condition 6: It is symmetrical, in that the interlocutors are in control of (and are themselves controlled in) the dialogue on an equal basis.

Linell, et al. (1988) maintain that the best way of understanding a dialogue is by comparing it with a chain, with the basic unit of analysis being each interactional turn. Each turn is coded for properties of response, or how it is linked to the previous turn, and initiative, which concerns how it links to the next turn. Initiatives continue the dialogue by requesting (soliciting or inviting) a response from the communicative partner and/or by the introduction of a new topic by the speaker itself. Responses ensure coherence with the preceding discourse by linking up to what the interlocutor or the speaker has said. Each turn of the dialogue under analysis is assigned to a particular category. There are 18 categories (plus three non categories: turn miscarriages, back-channel items, and inaudible turns).

Note

[1] The explanation of the Initiative Response Analysis method is derived from and therefore almost identical to the description presented by Linell et al. (1988) and Jahoda et al. (2009).

The category system consists of a small set of functions for initiative and response, which are based on the conditions of what Linell et al. (1988) consider essential to an ideal dialogue. These distinguishing features include:

1. The distinction between initiative and response: An initiative means that an interlocutor says something in his turn that will progress the conversation and is symbolized by > (strong initiative) or ^ (weak initiative). A response means that an interlocutor links up with the preceding turn and is symbolized by <. Both features, initiative and response, can be used in one turn.

2. The strength and scope of initiatives: Initiatives can be divided in strong initiatives, that is (explicitly) inviting or demanding, for example by asking a question, which are symbolized by > and weak initiatives (asserting or submissive), which are symbolized by ^.

3. The adequacy of a response: When a response is adequate (accepted) it is symbolized by <. When a response is inadequate or partially accepted, the turn is treated by the interlocutor as not satisfying the turn demands of, or as not even conditionally relevant to, his own preceding initiative (the symbol < is replaced by other options, see below).

4. The focality of turns: Focal means focusing on the main content of the other speakers' turn'. A nonfocal link usually involves remarking on or challenging the form or function of the interlocutors' preceding turn. A nonfocal response is symbolized by: instead of < .

5. Scope of links: Local vs. nonlocal responses. A local response means linking up with immediately preceding turn. A nonlocal response is a turn being linked to a specific nonadjacent turn further back in the preceding dialogue and is symbolized by.. instead of <.

6. Alter or self-linked response: When an interlocutor is linking up with the other speaker's preceding turn it is an adequate response. When an interlocutor links up with the his own preceding turn, it is symbolized by = instead of <.

The entire system of turn types is given, together with brief definitions, in the Appendix. The 18 categories can be ordered on a six-point ordinal scale from the strongest initiative with no response properties to the weakest response without any potential for promoting the dialogue any further (see Table 1).

Table 1. Turn Categories and interactional strengths on the six-point ordinal scale and the percentage of each interactional strength used by staff and clients.

		.. >	.. ^	.. <		
		: >	: ^	(>		
		< = >	< = ^	<)		
			= >	= ^	- >	
	>	^	< >	< ^	<	-
Interactional strength	6	5	4	3	2	1
Percentage used by staff	0.6	1.3	31.2	37.1	29.7	0.01
Percentage used by clients	0.2	0.8	4.5	62.3	30.2	0.2

Turns independent and strongly proactive

Turns totally dependent and not at all proactive

Measures of Initiative response analysis

For each dyad in this study, two measures were computed:

1. *The level of asymmetry*. The level of asymmetry is assessed by computing the difference between the level of dominance of the staff member and that of the client.

2. *The level of dominance of clients and staff*. The level of dominance is derived from an initiative response profile. This is a summary of the frequencies of the parties' turn categories on the six-point ordinal scale. The level of dominance refers to the median value of the scores on that scale.

In this study a total of 5105 turns were coded. Initial inter-rater reliability coding was carried out with four videotapes encompassing 910 turns. There was an overall agreement of 83% for using the same codes. Disagreements between raters were discussed and consensus on how these turns should be coded was reached.

Cross Recurrence Quantification Analysis

Recurrence Quantification Analysis (RQA) is used to assess how coordinated the non-verbal behaviour of the staff and clients is as the interaction unfolds. RQA is relative unknown within the field of social science and an extensive description is provided below. RQA is a particular type of nonlinear time-series analysis based on the registration of whether a system's state at each and every point during an observation recurs, that is, repeatedly occurs (e.g., Marwan et al., 2007; Webber & Zbilut, 2005; Zbilut & Webber, 1992). From these basic recurrences, several measures can be derived that quantify the dynamic organization of the underlying system. In order to study two interacting systems, cross-recurrence quantification analysis (CRQA) is performed (e.g., Shockley et al., 2002). In CRQA, recurrence reflects that the behavioural state of one of the systems (in this study the behaviour of one interlocutor) also occurs in the other system (i.e., the other interlocutor) at some point in the time series either earlier, concurrently, or later. In the present study CRQA allows us to analyse attunement, synchrony, and dominance of staff's and client's turn-taking behaviour from the temporal pattern in the time series. In order to answer the research question stated above, (categorical) CRQA was performed on the time series of clients' speech and staff speech. Matches (for explanation see below) between talking and being silent for all instances in the client's time series and all instances in the staff's time series are noted. These matches can graphically be represented in a two-dimensional grid, the rows of which represent the speech behaviour (i.e., talking and being silent) of one of the interlocutors and the columns represent that of the other interlocutor. In each cell of this grid we place a 'black dot' or 'white dot' depending on whether the cell reflects a recurrence (i.e., matching behaviour) or not (i.e., non-matching behaviour).

In terms of recurrence analysis these questions translate to the quantification of recurrence (i.e., counting recurrent points), particularly on and around the line of synchrony in the recurrence plot, as will be explained below. For an excellent in-depth treatise of CRQA in the context of conversation research, similar to the analysis performed here, we refer to the paper by Dale and Spivey (2006).

In this study we have chosen the following operationalization of 'recurrence': With respect to speech rhythm a black dot reflects an instance where only one of the interlocutors was talking, and a white dot reflects an instance where both were talking or both were silent. The reason for this particular arrangement of matching of client's and staff member's non-verbal behaviour is that it offers a meaningful partitioning of the interaction, as will become clear. The resulting graph is a Cross Recurrence Plot (CRP) of two time series (Figure 1). With the black-and-white colouring the CRP visualizes the periods where matching non-verbal behaviours are occurring and where behaviours are non-matching during the conversation.

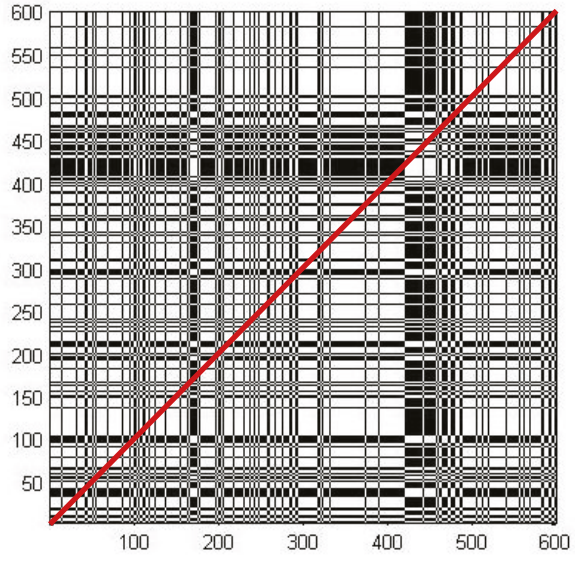

Figure 1. Example recurrence plot

Black areas represent periods of one person talking matched by the other person being silent some time later or earlier. The white areas, on the other hand, represent periods of silence or talking of one matched before or after by silence or talking of the other. In this way the RP represents a raw structure that can capture the distributions of matching and non-matching non-verbal behaviour, together with when these are occurring in the conversations. The diagonal line is the line-of-synchrony (LOS; see text).

An important set of points in the CRP is the main diagonal from the left-bottom corner to the right-top corner (diagonal line in Figure 1). This diagonal, called the line-of-synchrony (LOS), reflects simultaneous recurrences, in our case, matches between client's and staff's non-verbal behaviour performed at the same point in time. That is, where one was talking while the other was silent and (probably) was listening. The number of recurrent points (i.e., black dots) on the LOS divided by the total number of points of the line (which equals the length of the time series) is equivalent to the percentage of synchrony (%Sync).

The correspondence between the LOS and the central-tendency measure %Sync nicely demonstrates the fact that the CRP contains much more information than merely an analysis of matching actions at the same time. It offers a much broader quantification of the temporal pattern of non-verbal behaviour on all timescales during the conversation. We can inspect the relative number and distribution of matching and non-matching looking or talking behaviours as the client-staff interaction unfolds over time. In fact, RQA is the technique of extracting quantitative measures from CRPs (Zbilut & Webber, 1992).

All these derived measures are based on the basic concept of a recurrent point, as explained above in the context of the present study. The most basic measure drawn from a CRP is the *global recurrence rate* (RR_{global}), being the proportion of black dots (i.e., recurrent points) in the CRP. For the entire CRP this crude measure represents the overall extent to which staff and clients are using matching non-verbal behaviours. In the following we will introduce several other measures based on the recurrence rate in a predefined area of the CRP, specifically located around the LOS.

Important issues with regard to attunement of turn-taking behaviour are interlocutors' asymmetry and dominance during conversation. In order to quantify these aspects, a number of other recurrence-based quantities can be obtained by calculating the extent to which matching non-verbal behaviours occur in temporal proximity, rather than exactly at the same time (as with %Sync) or across the entire length of the sample (as with RR_{global}). Stated differently, it assesses whether and how much staff and client tend to match their non-verbal behaviours *around* the same time in the conversation. In other words, CRQA is the technique used to investigate the dynamic nature of interactional synchrony and the phases of coordinated speech rhythms. Regular face-to-face conversations will most likely show more prominent matching of non-verbal behaviours within a (small) interval around the 'presence'. As a result, recurrence will be higher within some area or temporal band around the line of synchrony than at larger distances in the CRP. This can be quantified by focusing on the relative number of black dots around the LOS. This measures has been labelled the *diagonal recurrence rate* of width w ($RR_{diag,w}$; see Dale & Spivey, 2006), and is defined as the sum of black dots in the band of width w around the LOS, divided by the total number of dots (black plus white) in that particular area.

Of particular interest are the $RR_{diagline}$ of individual diagonal lines in the CRP, parallel to the LOS either (closely) above or below that line. In this study each single-step diagonal displacement of such a line away from the LOS represents a temporal shift of one second. This temporal shifting enables a direct comparison of the non-verbal behaviour of one of the interlocutors to that of the other interlocutor one or more seconds earlier or later in the conversation. The size of the shift specifies how temporally distant (i.e., how much earlier or later) in the conversation the behaviours occurred, and its directions determines which of the interlocutors is initiating a particular non-verbal behaviour. Specifically, when the client's non-verbal behaviour time series is represented along the horizontal axis of the CRP and that of the staff along the vertical axis (see Figure 1), the lower-right triangular area (below the LOS) holds the points where staff performs a particular behaviour first, whereas the upper-left triangular area (above the LOS) those where the client was first. As can be seen from inspection of the CRP, the black dots in these areas reflect that such behavioural initiatives of one were matched some time later by the other. The further away these dots are from the LOS the later this matching occurred.

For instance for speech rhythm, the parallel diagonal line directly above the LOS holds all the black dots that reflect either talking or silence by the client that is matched exactly one second later by the staff member's silence or talking, respectively. This means that the $RR_{diagline}$ of this line quantifies the amount of recurrence with a one-second delay.

Let us consider a collection of such individual diagonal lines, each with a successive 1-second parallel shift away from the LOS, 20 steps below and 20 steps above the LOS (i.e., $w = 20$), and calculate $RR_{diagline}$ for each of them. In Figure 2, these 40 individual single-line $RR_{diagline}$ values are aligned and drawn, together with the RRdiagline of the LOS at '0' shift (which equals %Sync). This produces a so-called LOS-profile, which graphically represents the pattern of speech coordination.

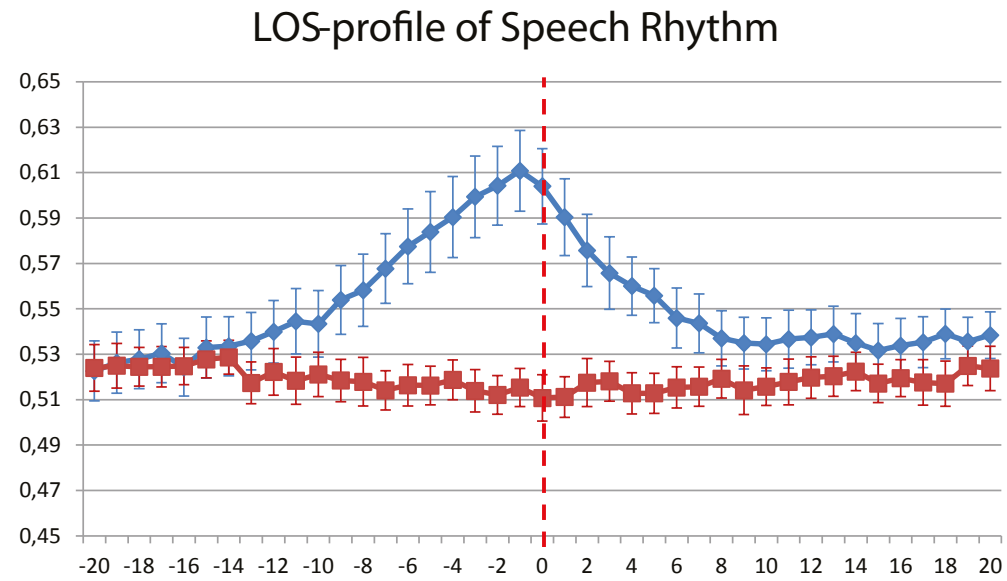

Figure 2. Example of the results of a LOS-profile analysis for speech synchrony.
The curve above (diamonds) shows the real-life conversation, whereas the curve below (squares) is the result of the LOS-profile analysis with shuffled time series. That is, with the temporal structure of the time series destroyed by the random re-distribution of the data points. The error bars reflect the standard errors of the mean for all conversations within each diagonal line.

From the LOS-profile, several interesting measures can be derived. First of all, as can be seen in Figure 2, the LOS-profile of a real-life conversation generally has a peak where the $RR_{diagline}$ obtains a maximal value, at some temporal shift around or on the LOS. This maximal value is labelled RR_{peak}, and provides a crude measure for the level of coordination between the two interlocutors.

In order to answer the research question, we will make use of the measures the global Recurrence Rate, and the RR_{reldif} to determine the degree of coordination between staff and clients. The degree of initiating or following the non-verbal behaviour patterns by staff or clients will be determined by the τ_{peak}. These measures will be correlated with the dominance and balance measures calculated from the initiative response analysis (Linell et al., 1988). Table 2 introduces measures based on the recurrence rate in the RPs and LOS-profiles, which will provide information about the dynamic patterns that occur during staff-client interactions. For an excellent in-depth treatise of CRQA in the context of conversation research, similar to the analysis performed here, we again refer to the paper by Dale and Spivey (2006).

Table 2. Description of CRQA and LOS-profile measures and concepts.

Measure	Description
RR_{global}	Global recurrence rate (RR_{global}), the proportion of recurrent (i.e. matching) points in the recurrence plot. *Matching* was defined as one person talking while the other was silent.
LOS	Line-of-Synchrony (LOS), main diagonal in the recurrence plot containing all matches and non-matches of speech of client and staff performed at the same time.
RR_{reldif}	RR_{reldif} is the maximum recurrence value in the LOS-profile relative to the 'background' (i.e. shuffled) recurrence rate in the LOS-profile. This measure reflects the optimal point of interlocutors' tendency to be talkatively alternating.
τ_{peak}	τ_{peak} is the temporal difference in seconds between the moment where RR_{reldif} is reached and the LOS (co-occurring behaviour).This measure reflects the delay in optimal matching between interlocutors and informs about their relative sensitivity. A positive τ_{peak} means more sensitivity for the staff member; a negative τ_{peak} means more sensitivity for the client.

To assess inter-observer reliability, initial coding was carried out with four videotapes, lasting for 53.2 minutes, in which the talk/silence sequences of staff and clients were coded. There was an overall agreement of 81% of the talk/silence sequences.

RESULTS

In this section we will first present the *Mean*, *SD* and *Range* for the level of interactional dominance and observer ratings of clients and staff, as well as the mean percentage scores, *SD*, and *Range* for the CRQA measures of the turn taking behaviours of the staff-client interactions. These results are derived from previous research by Reuzel et al. (2012, 2013) and form the basis for the results of this study.

In order to answer our research questions we will analyse the associations between the verbal interactional patterns of dominance and the attunement of turn-taking behaviour. Next we will investigate the associations between the patterns of dominance and the ratings of the observed quality of the interaction.

Is interactional balance in terms of dominating or being controlled during staff-client social interactions associated with attunement of turn taking behaviour? Table 5 shows that verbal balance in terms of dominating or being controlled during the interaction is associated with the attunement of turn-taking behaviour. When the interactions are more unbalanced, which means that the level of asymmetry is higher, we see that RR_{reldif} of turn taking patterns is higher. The relative difference peak reflects the optimal attunement of staff and clients' turn taking patterns: A higher RR_{reldif} means a higher level of turn-taking attunement. Table 5 also shows that the RR_{reldif} is positively associated with the dominance of staff ($r = .58$, $p < .05$) and negatively associated with the dominance of clients ($r = -.62$, $p < .05$). In other words, when staff dominate the content of the interaction more, this is associated with more attunement in turn-taking behaviour. When clients have more verbal influence on the interaction, this is associated with less attunement in turn taking. Figure 3 shows an extract of two interactions revealing the relative dominance of staff. In Example A the client is relatively subordinated and the level of attunement of turn-taking patterns is high. In Example B the client has a relatively mean level of dominance and the inter-personal attunement of turn taking is rather low.

Table 3. Mean, Standard Deviation (SD) and Range for the Level of Interactional Dominance and Observer ratings of clients and staff.

Initiative Response Analysis	Client	Staff	*t*-value	*p*-value
Level of dominance				
M	2.71	3.09	5.74	.001 **
SD	0.23	0.17		
Range	2.3 – 3.2	2.84 – 3.57		
Level of asymmetry				
M	0.38			
SD	0.31			
Range	-0.16 – 1.07			
Observer ratings Did staff listen to the client?				
M	7.9	6.9	3.3	.004
SD	0.8	1.6		
Range	6.2 – 8.9	3.0 – 8.9		
Did the client want to talk about the items that were discussed?				
M	7.5	6.9	1.9	.071
SD	1.4	1.5		
Range	2.5 – 8.8	2.5 – 9.0		
Was the way staff discussed the items adequate?				
M	7.6	6.1	4.3	.001
SD	0.86	1.5		
Range	6.0 – 9.1	2.9 – 8.2		
Overall Impression				
M	7.3	6.0	4.0	.001
SD	1.2	1.5		
Range	3. – 8.9	3.2 – 8.2		

** Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed).*

Table 4. Mean, SD and Range for the CRQA measures of staff-client turn taking behaviour.

CRQA measure *Turn taking behaviour*	Mean	SD	Range
RR_{global}	51.0	4.0	43.0 – 58.0
RR_{reldif}	18.9	5.2	10.7 – 28.5
τ_{peak}	-3.4	5.4	-19.0 – 3.0

Table 5. Pearson correlations between the Level of Dominance of Staff and Clients, the Level of Asymmetry and the Synchronization Turn Taking Patterns.

	RR_{reldif}	τ_{peak}	RR_{global}
Level of dominance Client	-.62*	-.32	.16
Level of dominance Staff	.58*	.36	-.23
Level of asymmetry	.78**	.44	-.24

** Correlation is significant at the .05 level (2-tailed); ** Correlation is significant at the .01 level (2-tailed).*

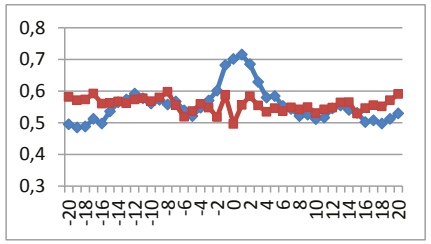

Figure 3. LOS profile of example A

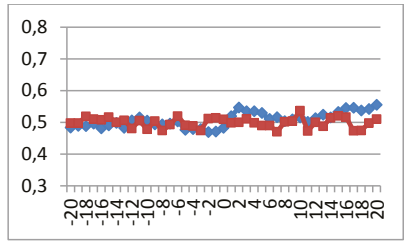

Figure 4. LOS profile of example B

Table 6. Extract of Two Interactions revealing the Relative Dominance of Staff

Example A	Example B
Dominance staff: 3.5 Dominance client: 2.5 Level of asymmetry: 1.0 RR$_{rdp}$: 28.5	Dominance staff: 3.3 (*M* = 3.1, *SD* = 0.2) Dominance client: 2.7 (*M* = 2.7, *SD* = 0.2) Level of asymmetry: 0.6 (*M* = 0.4, *SD* = 0.3) RR$_{rdp}$: absent (*M* = 18.9, *SD* = 5.2)
Staff: *Can you describe which feeling you have when you are feeling not so good* ***Client:*** *I don't know how to describe that* ***Staff:*** *No, that is difficult. But what do you feel on such a moment?* ***Client:*** *I don't know* ***Staff:*** *You don't know, but do you know what you want to do on such a moment?* ***Client:*** *Searching distraction* ***Staff:*** *Yes, in the past you choose to do other things, the other day, you went to buy a can of beer. Can you tell me why you did that?* ***Client:*** *I don't know*	***Staff:*** *You told me that you wanted to do something else in your free time. No more singing class.* ***Client:*** *Yes* ***Staff:*** *We agreed on the fact that you would call of the singing class. Did you do that?* ***Client:*** *O no, I didn't do that, I had other things to do as well* ***Staff:*** *Will you call them yourself, or do you want to do that together with me on Tuesday?* ***Client:*** *If you want to help me remind me on Tuesday.*

Table 6 and Figures 3 and 4 show that a high level of dominance of staff does not automatically align with a high level of attunement of turn-taking behaviour. The responsiveness of the client plays a significant role as well. Table 7 and Figure 6 show an extract of an interaction in which the client is more dominant than staff and there is a relatively low level of attunement of turn taking.

Table 7. Extract of a balanced interaction revealing the relative dominance of staff and client

Dominance staff: 3.0 (*M* = 3.1, *SD* = 0.2) Dominance client: 3.0 (*M* = 2.7, *SD* = 0.2) Level of asymmetry: 0.0 (*M* = 0.4, *SD* = 0.3) RR$_{rdp}$: 13.4 (*M* = 18.9, *SD* = 5.2)
Staff: Are you looking forward to going to the Hague? *Client: Well, it is not quite sure yet* *Staff: Oh, why?* *Client: Well, he (boyfriend) says: "You must decide for yourself, but I do have to work".* *Staff: OK* *Client: Then I said that I could still be sleeping when he would be away* *Staff: Yes, but do you think that he…he doesn't want…* *Client: I said…I asked "what do you want yourself?"* *Staff: Yes* *Client: He said: " You must decide for yourself", that is what he always says then* *Staff: Ok* *Client: So he thinks my choices are more important then his choices* *Staff: OK* *Client: And I would have to travel, so yes…*

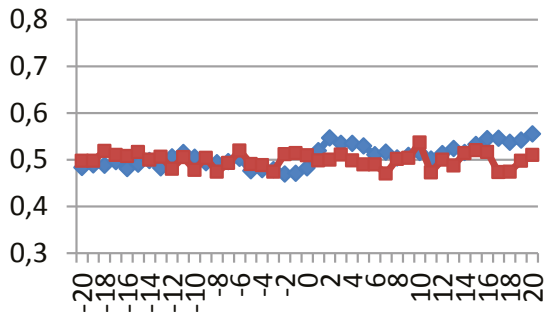

Figure 5. LOS profile of extract in figure 7

Interactional balance

Is verbal interactional balance associated with the experienced quality of the social interactions? In order to get a sense on how staff and clients evaluate dominance and asymmetry in social interactions, the interactional level of dominance and balance derived from the initiative response analysis were correlated with the observed quality of the interactions by independent staff and client observers.

Table 8. Pearson correlations between the level of dominance of staff and clients, the level of asymmetry, and the observer ratings of staff and clients

	Relation		Goal		Method		Overall impression	
Observed by	Clients	Staff	Clients	Staff	Clients	Staff	Clients	Staff
Level of dominance client	-.28	.13	.2	.28	-.25	-.06	-.12	-.08
Level of dominance staff	-.04	**-.50***	-.24	**-.57***	-.02	-.38	-.19	-.33
Level of asymmetry	.16	-.38	-.28	**-.53***	.16	-.18	-.03	-.14

** Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed).*

As Table 8 shows, neither the level of dominance of staff and clients nor the level of asymmetry were associated with the quality of the interaction as rated by independent client observers. This means that clients did not appear to base their judgments on the quality of the interaction on verbal-interactional patterns. Staff observers, however, did appear to be sensitive to verbal interactional dominance. The more dominant staff were during the social interactions, the less staff observers thought the individuals they observed listened to clients and the less they thought clients were inclined to discuss the items.

Discussion

This study investigated whether dominance on a content level was associated with synchronization of turn-taking behaviour, reflecting attunement on a process level. The results revealed that staff and client's verbal interactional patterns of dominance are related to the dynamical synchronization of turn-taking behaviour.

More specifically, verbal interactional influence of staff on social interactions is positively associated with synchronization of turn-taking behaviour and interactional dominance of clients is negatively associated with synchronization of turn-taking behaviour. Thus, a higher level of verbal asymmetry between staff and clients with ID goes along with a higher level of synchronization of turn-taking behaviour.

It has been shown before that people with an intellectual difficulty experience communication difficulties (Bartlett & Bunning 1997; Bott, Farmer, & Rohde, 1997; Law & Lester 1991). When staff members communicate at a dominance level that is characteristic of friendships, which means that there exists a relatively low level of asymmetry (Linell et al., 1988), interaction may result in a mismatch between the clients' level of understanding and the language used by staff (Blackwell et al., 1989; Bradshaw 2001; Enderby & Davies 1989; Purcell, Morris, & McConky, 1999; van der Gaag 1998). Staff on the other hand may use their verbal interactional skills to enhance attunement with clients in taking turns during speaking, and because staff is relatively more capable than clients are, they tend to drive the dynamical synchronization of turn-taking behaviour.

Staff's perceptions of the quality of the interaction were associated with verbal dominance and balance during the social interactions. Staff observers considered clients' influence on the content of the interaction to be positive. The dominance of staff was negatively associated with the relation and goal observed by staff. It is possible that staff view empowerment or client-centred approaches to signify that clients literally 'hold the floor.' This contrasts with the more nuanced dynamical patterns that reflect greater reciprocity between the staff and clients. The ability of staff to synchronize with clients is closely linked with rapport building, the smoothness of a social encounter and cooperation efficiency (Delaherche et al., 2012; Miles, Griffiths, Richardson, & Macrae, 2010). This indicates that staff have the skills to influence the conversations in a manner that enhances empowerment of clients. It is important to note that staff observers seemed not to have detected these skills.

The study by Reuzel et al. (2013) also revealed that staff observers were sensitive to nonverbal balance in an interaction in terms of more global measures of talking and initiating or following the turn taking behaviour (i.e., static and aggregate measures). Interestingly, clients were less sensitive to verbal or non-verbal interactional dominance and balance in the present study, but like the previous study by Reuzel et al. (2013) revealed, clients appear to be sensitive to the synchronization of turn-taking behaviour.

These findings align with a study by Ramseyer and Tschacher (2011), who investigated non-verbal synchrony between patient and therapist during psychotherapy sessions. They evidenced that non-verbal synchrony was associated with therapy outcome and patients' view of the therapy process.

Synchrony was higher in sessions that were rated by patients as a high-quality relationship and in patients experiencing high self-efficacy. Ramseyer and Tsacher also found that therapists' pacing (or being responsive to the non-verbal behaviour of the other interlocutor) was positively associated with patients' self-efficacy, while therapists' leading (initiating the non-verbal behaviour) corresponded positively with patients' relationship rating. Thus, a therapist's leading is positively related to high-quality relationship, whereas a therapist's pacing goes together with a patient's sense of self-efficacy.

These intriguing findings lead to an interesting question: What do staff and clients with an intellectual disability want to achieve during their social interactions? Given the fact that staff are sensitive to interactional dominance and associate less dominant staff members with higher quality interactions, they seem to place emphasis on a client's self-efficacy which fits with client-centred approaches. Clients, on the other hand, are sensitive to synchrony, and may therefore be more concerned with enhancing good relationships with staff. Future research should explore both staff and clients' perceptions of their interactions, in terms of what they want to achieve as well as on *how* they want to interact (Duchan, 1986). Perhaps most importantly, future research should focus on the view of clients and staff on what constitutes a collaborative relationship and how such relationships develop.

To summarize, staff and clients have a tendency to be sensitive to different aspects of an interaction. In general, staff are sensitive to dominance and balance in an interaction, both in terms of verbal and non-verbal behaviour. Clients appear to be sensitive to a finer level of attunement, the synchronization of turn-taking behaviour. The patterns of interaction found in this study may contribute to the training for front-line staff in services for people with intellectual disabilities, and help enhance their communication skills and foster client-centred approaches.

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CHAPTER 5

PERCEPTIONS AND EXPECTATIONS OF REGULAR SUPPORT MEETING BETWEEN STAFF AND PEOPLE WITH AN INTELLECTUAL DISABILITY

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Perceptions of regular support related meetings between staff and clients with an intellectual disability.

ABSTRACT

Background

Client-centred models of care emphasise the importance of collaborative working between staff and clients with intellectual disabilities. How people with ID perceive the nature of their engagement with staff is relatively unknown. This study investigated the perceptions of staff and people with ID about goals and important aspects of their meetings.

Method

Interviews were carried out with nine client-staff dyads. Prior to their meeting, participants were asked about their expectations. Afterwards, participants were asked about what they believed happened during the interaction. The participants' answers were subjected to a thematic analysis.

Results

People with ID appreciated the opportunity to tell their story and valued reliable practical support and advice. A trusting relationship was important to both clients and staff. Only staff emphasized promoting client's autonomy.

Conclusion

It appears that the concern of staff for empowerment may not always be in keeping with the expectations of people with intellectual disabilities.

Introduction

The United Nations Convention on the Rights of Persons with Disabilities (UN, 2006) promotes the rights of clients with an intellectual disability to be part of decision-making processes about their own lives. The UN declaration is consistent with current client centred philosophies of care, which also promote a more client-centred approach. For example, staff members are encouraged to actively seek the opinions of people with an ID and to negotiate the support they need. In general, reaching common ground during conversations requires a degree of mutual understanding and shared goals (Clark & Brennan, 1991; Steenbeek & Van Geert, 2007). However, it is in the everyday contact between staff and people with an ID, where attempts to develop a more person centred approach actually happens (Social Exclusion Unit 2005, p. 57).

The general assumption that support meetings between staff and people with an ID have a major influence on the quality of life of people with an intellectual disability is widely acknowledged (Embregts, 2011; Schalock, 2004). Still, there seems to be a paucity of research investigating the views of people with an ID about the quality of their meetings. In a recent study conducted by Roeleveld and her colleagues (2011), people with mild intellectual disabilities were interviewed about their relationship with staff. During these interviews, clients indicated that they value interactions that are characterized by honesty, trust, caring, and a feeling of being both emotionally and physically protected (Roeleveld et al., 2011). When clients have been asked to express their views about good quality of care, they emphasised that support staff should be respectful and accepting, and show a caring and nurturing attitude (Clarkson, Murphy, Coldwell, & Dawson, 2009).

The body of literature investigating interactions between staff and people with an intellectual disability includes observational work about the quality of everyday interactions between people with intellectual disabilities and care staff (Embregts, 2000a, 2000b; Finlay, Antaki, Walton, & Stribling, 2008; Finlay, Walton, & Antaki, 2008). Other studies have focused on the relationships between client characteristics such as cognitive skills, psychological problems, psychiatric illness, and its effect on social interactions (Bromley & Emerson, 1995; Dekker & Koot, 2003; Emerson, 2003; van Nieuwenhuijzen et al., 2006; Wallander, Dekker, & Koot, 2003). However, these studies tend to focus on the abilities of the people with an ID or on the competences of staff (Dagnan, Chadwick, & Proudlove, 2000).

Few studies have investigated the pattern of interaction between staff and people with intellectual disabilities during routine meetings (McConkey, Morris, & Purcell (1999). By routine meetings we mean regular meetings in which staff support the people with an ID with a broad range of daily living tasks, such as helping with household jobs, planning social and vocational activities, arranging appointments, healthcare, and managing relationship difficulties. Several studies have investigated the quality of the interactional patterns between staff and people with profound or severe intellectual disabilities and/or communication problems (Bradshaw, 2001; Edge, 2001; Purcell, Morris, & McConkey, 1999). Yet, few studies of this kind have been undertaken with young adults with mild to borderline intellectual disabilities, who are expected to have communicative abilities that makes them more equal partners in interactions with staff.

Recent studies by Reuzel et al. (2012, 2013, 2014) investigated interactional patterns between staff and people with mild to borderline intellectual disabilities during routine meetings. Reuzel and her colleagues investigated the attunement of staff and people with an ID both on a content and on a process level. Attunement refers to the reciprocity of staff and clients' verbal and non-verbal behavior during their routine meetings. To achieve a shared dialogue at the content level, staff and people with an ID must reach a mutual understanding and common ground about what is said. At the process level, staff and people with an ID should be able to accurately predict the beginnings and endings of each others' communicative turns. Accurately predicting the ending of the other speaker's turn, allows the individual to gauge the correct time to begin his or her turn, allowing the conversational partners to achieve synchrony (Delaherche et al., 2012).

Reuzel and her colleagues found that staff and clients seemed to be sensitive to different aspects of their interaction. In general, staff seemed to be sensitive to dominance and balance in interactions, both in terms of verbal and non-verbal behavior. Dominance in this context is the level of influence a person has on the course of the interaction, for example, by taking the initiative. People with an ID appeared to be more sensitive to a finer level of attunement, namely, synchronization of non-verbal behavior.

Staff members were sensitive to interactional dominance and they associated more dominance shown by people with an ID with higher quality interactions (Reuzel et al., 2014). One explanation for this finding is that staff placed most value on empowering people with an ID, which is consistent with the value placed on client-centred approaches. People with an ID, on the other hand, were sensitive to synchrony. Since synchrony is assumed to be related to rapport, people with an ID may therefore have been concerned with building good relationships with staff. In order to gain a better insight into the quantitative analyses of the interactions reported by Reuzel et al (2012, 2013, 2014), the current study aimed at exploring what both staff and people with an ID said about the same kind of regular meetings.

There has been important work using conversational analysis to examine talk between staff and people with learning disabilities (Antaki, Young & Finlay, 2002; Antaki et al. 2006, 2008; Antaki, Finlay & Walton, 2007; Finlay, Walton & Antaki. 2008). However, there is hardly any research in which people with ID themselves and staff members are simply asked about how they think about the conversations they have during regular meetings, including what they want to achieve and what they think is important. Because the aim of this research was to shed more light on these experiences and opinions of support staff and people with an ID without making prior assumptions, qualitative interviews were used. The interviews were then thematically analysed using a general inductive approach (Thomas, 2006) in order to build an understanding of their views from their own accounts. The following questions were addressed:

- What were staff and people with an ID's expectations and goals for their regular support meetings?

- What did staff and people with an ID consider to be the most important aspects of their support meetings?

METHOD

Framework and recruitment of participants

Individuals with mild to borderline intellectual disabilities receiving services from the JP van den Bent foundation in the Netherlands and staff working within this foundation were recruited to participate in the study. The JP van den Bent foundation provides services to people with an intellectual disability. The role of staff is to support people with an ID with a broad range of daily living tasks, such as helping with household jobs, planning social and vocational activities, arranging appointments, healthcare, and managing relationship difficulties. Staff members discuss their input with people with an ID and agree on a support action plan, which sets out the nature of support to be given and how it will be provided. Ethical approval was obtained from the board of the JP van den Bent foundation. Managers and psychologists were provided with information about the purpose of the study. They selected nine staff to participate in the study working with people who have mild to borderline intellectual disabilities and met with their clients on a regular basis, at least once a week. All participants volunteered for the study and received a verbal explanation of its purpose and about what would happen if they took part. The researcher contacted each staff member and the people with an ID they supported to explain the main goals of the study. They received a letter in which the purpose of the research was explained. The researcher explained that participation in this study was voluntary and that staff and people with an ID could withdraw from the study at any time. Written consent was sought from all participants.

Nine staff members (2 men and 7 women), working at the JP van den Bent foundation in the Netherlands, participated in this study. The staff members who took part in the study worked in different regions and settings. Most staff members (n = 5) worked in community-based residential houses. One staff member worked in an outreach service for people living in their own homes, and three worked in crisis care, which offers support to people who require urgent help for a number of reasons, such as unstable home situations. Their mean experience of working in services for people with an ID was 9.2 years (*Range* = 6 – 13 years). Each staff member was asked to select a client who they worked with on a regular basis or who they met at least once a week. Staff were asked to gauge the clients' interest in participating in this study without any pressure or reinforcement.

The mean age of the participating people with an ID was 30.1 (SD =7.3) and ranged from 23 to 42 years. Five of the people with an ID were men and four were women. They all lived in community care settings and received support from services. One person with an ID lived by himself in an apartment with outreach care and four lived alone with 24-hour support available. One person with an ID lived in a staffed house for training purposes and three people with an ID were living temporarily in staffed houses (crisis care). The Wechsler Adult Intelligence Scale (WAIS-3) was used to assess their level of cognitive functioning.

Their scores ranged from 61 to 77 (*M* = 71.6; *SD* =5.9). All people with an ID had sufficient verbal ability to express their thoughts and feelings.

The regular support meetings were required to meet the following criteria: 1) the topic concerned an aspect of the participants' support needs, and 2) it was the type of conversation that occurred on a regular basis, at least once a week. No instructions were given to staff or people with an ID, other than to carry on as normal. Different types of topics were discussed including: planning or evaluating people with an ID's goals, planning activities like making a weekly schedule;, doing administrative tasks and planning finances, evaluating a work situation, discussing possibilities for future housing, discussing problems related to a drug addiction, or how to cope with conflicts with other people and to find solutions for various problems the person with an ID had to deal with.

Interviews

Interviews were then carried out with nine people with an ID and staff, before and after they had their regular support meeting. The average length of the interviews was 14 minutes (ranging between 10 to 25 minutes). The people with an ID and staff were interviewed separately by the researcher twice, before and immediately after their regular meeting. People with an ID were interviewed at home and staff were interviewed in the office where they were based. The interviews were video recorded and transcribed verbatim.

The participants' responses to each of the two main questions concerning a) their expectations and goals for their regular meetings, and b) what they considered to be the most important aspects of their meeting, were extracted from the transcripts and subject to thematic analysis, using a general inductive approach. To obtain this information, questions were asked like: "Why are you having this meeting? What do you want to discuss? What is the purpose of this meeting? What do you hope to achieve or what do you hope this meeting will bring you?" Directly afterwards participants were asked about the nature of the meeting and how the meeting went. Questions were asked like: "How was the meeting? What did you discuss? What went well, what did not? Did you manage to discuss the items you wanted to? What did you find important while you were having this meeting? Were you satisfied with the meeting? What did you think of the way in which the items were discussed?"

Analysis

We used a general inductive approach to identify the themes that were evident in the data . A primary objective of our research was to identify the expectations of staff and people with an ID about their regular meetings and what they viewed as important aspects of the meetings they held.

The following procedures were used for the thematic analysis (Thomas, 2006):

1. Close reading of the text. The transcripts were read in detail until the researcher was familiar with the content.

2. Identifying themes: After reading all transcripts carefully, the first transcript was read by the first author again and emergent themes noted.

3. Continuing revision and refinement of themes: The original table of themes formed the basis of the analysis of subsequent transcripts, with a new table being produced for each transcript. Where additional themes emerged within subsequent transcript, earlier transcripts were re-examined for data that might also reflect the new theme. The resulting tables were compiled and compared to produce a master-table of clustered themes and corresponding sub-themes. These themes represented not only the commonalities between transcripts, but also all variations between them.

4. Identifying major themes: Themes were considered to represent the data provided by participants, but at a higher level of abstraction. Where possible, specific themes were grouped into broader categories to reflect perceived relationships between them. The labels used for these themes represented a higher level of abstraction and interpretation (Joffe & Yardley, 2004). For example the themes 'listening sincerely to clients', 'taking an interest in clients' and 'thinking along with clients' were clustered under the higher order theme, namely the 'relationship between staff and clients'. All emergent themes were recorded in a table.

The primary analysis was completed by the first author, who also completed all the research interviews. To ensure that the analysis was carried out with rigor, the decision making about the extraction of themes was recorded as the process of analysis was carried out. Secondly, the analyses were discussed with other members of the research team, one of whom examined a number of transcripts independently of the first author. Finally, the extracted themes were linked back to verbatim quotes, to ensure that the themes were firmly grounded within the data.

RESULTS

What are staff and people with an ID's expectations and goals of their regular support meetings?

General well-being

A majority of the participants said their meetings were about the general wellbeing of the client (for staff *n* = 6, for people with an ID *n* = 7). As one person wit an ID stated: "She asked me how my week was" or "there is always something we can talk about. Usually staff asked me how I've been." People with an ID expressed the view that being able to talk about their concerns helped them to remain calm. Comments made by staff are: "we just make conversation: what happened, what went well?" or "when I come to his house, I usually sit down and see what's going on".

Practical support

The second most important goal of their regular meetings for both staff and people with an ID was offering or receiving practical support. Staff (*n* = 4) and people with an ID (*n* = 4) referred, amongst others, to practical support with administrative tasks, arranging transport and making appointments with authorities.

Teaching skills and evaluating interventions

Other goals mentioned by both staff and people with an ID included teaching new skills (for staff *n* = 2 , for people with an ID *n* = 2) and evaluating an intervention(for staff *n* = 3, for people with an ID *n* = 2). Staff referred to practical skills that people with an ID wanted to learn, like managing their finances. A few staff members mentioned that they hoped that people with an ID would gain some insight into their behavior, such as dealing with their emotions. One person with an ID talked about things she wanted to learn about raising her sons: "like when to discipline, how often do I have to discipline the little one and how often the oldest?" Another person with an ID said that she wanted to be more assertive: "That is what I should learn, when I don't like something, I have to say it to that person or to staff".

Obtaining advice

A few people with an ID said they hoped to get some advice from staff on how to handle specific issues (*n* = 3). One person with an ID had fallen out with her sister and she wanted to know from staff how she could start a conversation with her. Another person with an ID wanted advice on how to deal with a colleague, who was always complaining about him.

Support action plan

Two staff members wanted to use their meeting to work on components of their clients' support action plan. None of the people with an ID mentioned this.

Other

One person with an ID had no idea why he had a meeting with staff and had no goals or expectations for the meeting. The staff member mentioned that she wanted to know what the client with an ID thought about the support he received.

What do people with an ID consider important aspects of their support meeting?

The result of the meeting

After their meeting with staff, people with an ID described what they considered to have been of importance. Table 1 shows that seven people with an ID felt they received helpful advice from staff. Being able to tell their story and get practical support were also important for people with an ID. Most participants said they appreciated the advice from staff. "I like it when they advice about how to solve this problem'. People with an ID also valued the practical support from staff: "I want things to be done for me, when they are too difficult for me. I just have to mention something and staff make sure it has been done. Like I wanted to go to the gym and he arranged that immediately." The outcomes that the people with an ID listed were consistent with the goals and expectations they outlined before their meetings.

Communication

People with an ID thought staff members' communication was also important. They highlighted three aspects of the staff's communication as being of particular importance, namely clarity, use of language, and communication style.

Clarity: People with an ID most needed clear information from staff. For example, when arranging appointments they found it helpful to know what would happen, when it would happen, where, with whom and how. Negotiating these agreements meant people with an ID knew what they had to do. For example, a few people with an ID mentioned they had made clear plans about what they should do when they got upset.

Use of language: A minority of the people with an ID talked about how staff adjusted the language they used. For example, people with an ID said they were able to understand staff perfectly, because staff talked slowly and handled issues one at a time. One person with an ID said: "She told things in my own words and that is what I like".

Communication style: people with an ID felt that the way staff talked was important. For example, they appreciated staff talking calmly, giving compliments, speaking in a straight forward manner and letting people with an ID finish speaking. Several people with an ID said that they could judge whether staff were being genuine or not.

Table 1. Important aspects according to people with ID (N= *9*) and staff (N = *9*).

Important aspects according to people with ID	
Results meeting	
Got usable advices from staff	7
Being able to clear their head/ tell their story	4
Got practical support	2
Communication	
Clarity	6
Concrete agreements had been made	6
Agreements were reported, so everyone involved would be aware of the appointments	1
Use of language	3
Staff talked slowly and understandable	1
Staff used the clients own words	1
Staff took enough time	1
Staff structured the conversation	1
Style	7
Staff talked calmly	5
Staff gave compliments	1
Staff said things straight forward	1
Staff let me finish talking	1
Relationship	
Staff taking clients seriously by	7
Listening to people with ID	5
Taking an interest	2
Doing something with the things proposed by clients	1
Thinking along with the client	1

Important aspects according to staff	
Results meeting	
People with ID were able to express their concerns	5
Being able to give advice	4
Offered practical support	2
Gaining insight	3
Communication	
Clarity	6
Making concrete agreements	4
Report what has been agreed	4
Setting an agenda in advance	2
Making sure all people involved are aware of the agreements	1
Use of language	7
Reaching mutual understanding	6
Regularly repeating information	1
Making things clear by visualizing things	1
Following the pace of the client	1
Style	
Staying alert	2
Giving compliments	1
Using humour	3
Keeping own emotions under control	1
Nonverbal communication	
Paying attention to nonverbal signals	3
Relationship	*7*
Helping people with ID feel at ease	6
The client felt heard	3
Being available	1
Autonomy	*5*
Letting people with ID make choices for himself.	4
Watch out for not filling in for the client	2
Give the client limited choices	1
Setting boundaries	1

Relationship

Finally, people with an ID talked about their relationships with staff. Seven people with an ID mentioned that staff took them seriously and felt that staff listened to them carefully. Five people with an ID mentioned that staff took a genuine interest in them and that there was mutual understanding. For example, people with an ID mentioned that they felt a 'connection' with staff. One person with an ID said: "I do trust her. With her I discuss different things, personal stuff." One person with an ID said it was important that staff kept their promises about what they said they would do. People with an ID wanted staff to be reliable, like being on time, and to be honest.

What do staff consider important aspects of their support meeting?

The results of the interaction

Staff thought it was important for people with an ID to be able to tell their story and to talk about the concerns they had (Table 1). Staff also thought that providing advice and practical support was vital. Three staff members hoped people with an ID would gain coping skills, such as learning how to deal with their emotions and developing parenting skills.

Communication

Staff also thought communication was important and referred to clarity, use of language and communication style. However, there were subtle differences between the views expressed by staff and people with an ID.

Clarity: Staff thought it was important to make concrete agreements and to keep notes about the conversation, in order to be able to give feedback to people with an ID what had been agreed. Two staff members made an agenda in advance, so they knew what they would be talking about. As one staff member said: "I like things to be structured, that is why I write down which items I want to discuss".

Use of language: The majority of staff tried to ensure there was mutual understanding about what had been said. As one staff member commented: "I noticed I had to ask questions carefully in order to get concrete answers." Another staff member stated: "I tried to verify what I heard, so I checked with him if my interpretation was right." It was regarded as essential to communicate clearly and follow the pace of people with an ID in order to establish a meaningful dialogue. "I used to run ahead and the person with an ID followed. I had all kind of ideas, but before people with an ID could process the information... I had to learn to follow their pace."

Communication Style: Using humour was thought to be important by staff, as well as keeping their own emotions under control. One staff member thought it was good to give compliments. Two staff members mentioned that it was essential to stay focused, and to be careful to avoid drifting away in their own thoughts. Three staff members said that they focused on people with an ID's nonverbal communication, trying to monitor the feelings of people with an ID.

Relationship

Relationships with people with an ID were also seen as important by staff. Most staff thought the people with an ID felt at ease, because they were open and talked easily. Three staff members said that they listened carefully to people with an ID, so that the people with an ID felt heard. One staff member thought it was vital to be accessible: "I told her (person with an ID) that she can really give me a call. That is possible, because we are there 24 hours a day. That is why you can always come to us for help".

Autonomy

One issue that was only mentioned by staff was a wish to promote the people with an ID's autonomy. Most staff members stated that they wanted people with an ID to do things themselves, whenever they were able to. As one staff member said: "She has a meeting with her consultant at work and she wants me to be there. She finds it stressful. But if she can manage to do this on her own we say: Can you go yourself? And then she says: I think so. Well, then we are going to try that and if it does not work out, we will talk about it later." All staff emphasised the importance of communicating with people with an ID in a manner that helped to promote their agency. As one staff member said: " I asked questions, so she could make a considered choice", " I had to let her think for herself more." In contrast, one staff member said he had to restrict the person with an ID's autonomy by setting boundaries, and making it clear what was acceptable and not.

Plan based working

Only one staff member referred to the need to plan for their regular meetings. She said that since they had started planning their regular meetings together with the person with an ID had felt more involved.

DISCUSSION

This study investigated the experiences and opinions of individuals with an intellectual disability and support staff in relation to their routine meetings. The results suggested that all participants were primarily concerned with the general wellbeing of the person with an ID. Most frequently, the objective of the interactions was not set in advance, but emerging topics were discussed. The type of unstructured support examined in this study, where people with an ID are able to express their thoughts and feelings, seemed to help foster good relationships between staff and people with an ID.

Indeed, people with an ID frequently stressed the importance of being listened to properly. This finding is consistent with other studies where clients placed emphasis on their relationship with staff (Clarkson et al. 2009; Kilbane & Jahoda, 2011; McVilly, Stancliffe, Parmenter, & Burton-Smith, 2006; Roeleveld, et al., 2011). Clients appreciated staff characteristics like being caring and understanding, qualities that might be associated with a supportive friend (McVilly et al., 2006).

Although the interactions in this study may have been experienced as warm and supportive, it is unknown whether these interactions helped to empower people with an ID or promote their self-efficacy. This is despite the fact that empowering people with an ID was one of the aims identified by staff for the interactions. In fact, it was noticeable that relatively few people with an ID made comments about self-efficacy. This may be a result of the fact that the questions asked referred specifically to their last social interaction and not to general themes that were important to people with an ID. For example, if people with an ID had been asked directly about what was important in their lives, they may have mentioned their autonomy. On the other hand, staff references to the self-efficacy of people with an ID may have reflected their beliefs about their role as staff more generally, rather than what actually happened during the meetings. There are other possible explanations of why staff referred to self-efficacy more often than people with an ID. Several studies have suggested that individuals with intellectual disabilities are likely to remain more dependent on external support rather than their own resources, even when this is unnecessary (Langdon & Talbot 2006; Wehmeyer & Palmer 1997; Zigler & Balla, 1972). It may be argued that the ad-hoc nature of the support reinforced dependency, because there was no regular monitoring or evaluation of how these meetings contributed to people with an ID's longer term needs or goals. Nevertheless, people with an ID clearly stated that they wanted to receive advice and practical support from staff to deal with difficulties they encountered. Our findings point to a potential tension between policies and practices for support staff. On the one hand they are encouraged to enhance people with an ID's self-determination and independence, and on the other hand, people with intellectual disabilities express a clear need of support and help (Donner, Mutter, & Scior, 2010).

Whether or not the meetings helped to foster the people with an ID's wider sense of self-efficacy in their lives, staff did appear to be aware of how to adjust their communication to enhance their attunement with people with an ID. For example, staff talked about using language that people with an ID could comprehend, carefully pacing the conversation and checking to ensure there was mutual understanding about what had been said. These findings were in line with the results of a recent study by Reuzel et al. (2014). They found the support staff they studied made efforts to synchronize their interactions with people with an ID. The ability of staff to synchronize with people with an ID not only helped to build rapport, but was also closely linked with greater cooperation between the communicative partners (Delaherche et al., 2012). This suggests that staff may have the skills to help empower people with an ID as partners in an interaction. This in itself could be used to positive effect if, for instance, the people with an ID wished to obtain advice or practical support as experts on their own lives.

This was an exploratory study and it may be worthwhile to carry out a larger scale study of this nature, in order to ascertain whether views and experiences articulated in the present study reflect those expressed by staff and people with an ID in different contexts. The study had a number of limitations. Firstly, qualitative approaches acknowledge that researchers may hold views that can impact on the research process, including the nature of the data collected and its interpretation. However, within the present study, attempts were made to acknowledge and explore the researchers assumptions by making explicit the decision making process and by means of external supervision and an independent audit of the themes. Secondly, the fact that the social interaction was video recorded and participants were interviewed before and after may have influenced the social interactions and therefore the participants' answers. For example, the video-recording may have made the participants feel uncomfortable and for that reason they may have used short answers.

In conclusion, staff and people with an ID seemed to mainly agree on important aspects of their regular social interactions, but there were subtle differences in the views expressed by staff and people with an ID. Both staff and people with an ID emphasised the need to work at maintaining their relationship. Staff were aware that being reliable, taking people with an ID seriously and listening to them carefully were necessary for a successful dialogue. However, there is a possibility that staff concerns with empowerment may not always be in keeping with people with an ID's wishes and expectations. There have been important past findings about the limited opportunity for people with intellectual disabilities to be given a proper voice in interactions with support staff. It would be paradoxical if an attempt to foster agency resulted in people's own wishes and needs being overlooked. This is an area that requires further investigation.

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CHAPTER 6

VERBAL INTERACTIONAL DOMINANCE AND LINGUISTIC COUPLING OF STAFF AND A CLIENT WITH AN INTELLECTUAL DISABILITY DURING WHATSAPP CONVERSATIONS

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ABSTRACT

Background

Since we live in a digital world and access to support becomes ever more mobile, the need and demand for advice through the internet gets increasingly more critical. In this study we will investigate how support staff and a client with a borderline intellectual disability (ID) communicate on WhatsApp. More specifically, we will investigate dynamic patterns of WhatsApp conversations between staff and a client with ID in order to determine whether their online behavior is synchronized and what the patterns of dominance and balance are.

Method

Forty WhatsApp conversations between nine different staff members and a single client were analysed using Cross Recurrence Quantification and the Initiative –Response analysis by Linell et al, 1988. In addition the client was asked what her motives were to use WhatsApp

Results

The client uses WhatsApp for practical questions, but also for expressing her thoughts and feelings. The WhatsApp conversations were reasonable balanced in terms of power distribution and the words used by staff and the client were synchronized. During WhatsApp conversations support staff used their skills to enhance attunement on a process level; they created coherence in the used words by asking questions.

Conclusion

The results of this study show that the WhatsApp conversations used by the client seems to serve similar functions as face-to-face communication. WhatsApp can be used for different types of conversations and allows the client to play an active role. Since online communication requires specialized skills, it is important to train staff accordingly to guide the conversations.

INTRODUCTION

The purpose of services for people with intellectual disabilities is to support people's lives (Bellamy, Newton, LeBaron, & Horner, 1990). The core quality of life domains, such as interpersonal relationships, personal development, self-determination, autonomy, and the emotional wellbeing of people with intellectual disabilities directly depend on what happens in the interaction between staff and clients (Schalock, 2004). In this context, interactions between staff and clients with an ID are crucial for the services' success in meeting people's needs (Social Exclusion Unit 2005, p. 57). There is an extensive body of literature exploring the quality of face to face interactions between staff and clients with an ID. Recently, however, a new form of interacting is rising, namely online communication. Since we live in a digital world and access to support becomes ever more mobile, the need and demand for advice through the internet gets increasingly more critical. The language and ways in which clients with an ID are supported needs to reflect their experiences and be engaging in new and relevant ways. In other words, there is a challenge to ensure that advice, support, and information are available in forms they like and can relate to. Today's electronic technologies, including computers, cell phones, internet, and electronic organizers hold great promises for individuals with ID. A survey among 83 adults with ID revealed that forty-one percent of participants used a computer, 25%, the Internet, and 11%, electronic organizers (LoPresti, Bodine, & Lewis, 2008). Interest in using such technologies was high and participants offered suggestions for improved accessibility. Internet-based technology, or e-health, has become increasingly important for promoting access to care and self-care management (Umefjord, Hamberg, Malker, & Petersson 2006; Tjora, Tran & Faxvaag, 2005). Particularly, systems that combine high-quality information with interactive components for self-assessment, decision support, or behavior change have the potential to reduce costs while maintaining the same or achieving better quality of care (Kerr, Murray, Stevenson, Gore, & Nazareth, 2006; Verhoeven, van Gemert-Pijnen, Dijkstra, Nijland, Seydel & Steehouder, 2007). This means that technology can respond to the increasing demand for care in the aging society.

Understanding of the mechanisms in which support or advice may, or may not, take place in online contexts, is essential in the usage of computer mediated support. Research concerning online communication between staff and clients with an intellectual disability is rather new. Previous studies on the use of online support forums, for people with and without ID, have highlighted the tendency to offer support when it was not asked for (Stommel & Koole, 2010; Vayreda & Antaki, 2009). Vayreda and Antaki (2009) concluded that online responses tend to take the form of advice, albeit the users claimed they wanted something much less directive, such as accounts of others' experiences, reassurance, or basic information. In addition, Pudlinski (2002) argued in his analysis of advice on a community mental-health telephone line that callers "balance their needs for assistance, friendship and autonomy……Clients seek friendship (i.e. someone who will listen to their troubles) in addition to, or in place of, advice" (2002, pp. 481-482).

People with an ID use online communication and especially WhatsApp more and more in their contact with staff. However, as far as known, no information is available on the purposes and quality of the WhatsApp conversations between staff and clients with ID. For example, can support staff and clients with ID have a balanced WhatsApp conversation in terms of power distribution and do they synchronize their online behavior? Therefore, in this study we will investigate how staff and a client with a borderline ID communicate on WhatsApp. What activities does the client in her online post for advice or support and what responses does she receive?

Conversations are dynamic with the inter-play between both communicative parties helping to determine what happens. To get a better grasp of the dynamic nature of staff-client online conversations, the present study focuses on the patterns of communication. First we want to investigate the motives of the client to use WhatsApp. What are the advantages and disadvantages according to the client and what are important aspects of online communication? Second we will investigate whether the staff-client WhatsApp conversations are balanced in terms of power distributions. Who is taking initiative and to what extent do parties control the content of the conversation? The patterns of dominance and balance will be captured by the initiative-response analysis, designed by Linell, Gustavsson, and Juvonen (1988) and by calculating the number of words in which the client or staff is taking initiative.

Next to this balance of power, we were also interested in attunement on a process level. For any form of communication to be successful, rapport or engagement appears to be of crucial importance. For example, Reuzel et al (2014) found that in addition to valuing helpful advice and practical support, clients appreciated being able to tell their story and having reliable support. Both clients and staff thought it was important to have a trusting relationship. Rapport building, the smoothness of a social encounter and cooperation efficiency are closely linked to the ability to synchronize with a partner (Delaherche, et al. 2012). Several empirical studies indicated that an interpersonal coupling or synchronization is linked to feelings of connectedness (Lakin & Chartrand, 2003), mutual understanding (Shockley, Richardson & Dale, 2009) and more cooperative abilities (Valdesolo, Ouyang & DeSteno, 2010). In an earlier study, Reuzel et al. (2012), revealed that staff and clients turn taking patterns during face to face interactions were synchronized and that the level of synchronization was associated with the clients' observed quality of the interaction.

In another study, Reuzel et al. (2013) found that staff tend to drive the dynamic synchronization of turn taking behavior and used their skills to enhance attunement. The present study will investigate underlying dynamical patterns of WhatsApp conversations of different staff members with a single client in order to determine whether their online behavior is synchronized. In this study, synchronization will be defined as the reciprocity of staff and the clients' written utterances. A nonlinear time-series analysis technique called recurrence analysis was used to examine the patterns of linguistic synchronization of staff - client online dyads (e.g., Church, 1993; Eckmann, Kamphorst, & Ruelle, 1987; Marwan, Romano, Thiel, & Kurths, 2007; Von Heijne, 1987; Zbilut & Webber, 1992; see Dale and Spivey, 2005, for a review, and Webber & Zbilut, 2005, for an technical introduction). This technique was originally used for the analysis of time series of continuous variables of physical or biological systems. Recently, however, the technique has been successfully applied in the social and behavioural sciences and used to explore patterns of syntactic coordination between children and parents (Dale & Spivey, 2006), eye movement synchronization between speakers and listeners (Richardson, Dale, & Kirkham, 2007), mother-infant gaze flexibility during reunion in a still-face procedure (De Graag, Cox, Hasselman, Jansen, & de Weerth, 2011), and intervention-induced changes in parent-child conflict conversations (Lichtwarck-Aschoff, Hasselman, Cox, & Granic, 2011). This method provides an analysis of global structural patterns of dialogue, charting how used words of staff and client align during interaction. By global we mean drawing general quantitative measures with minimal dependence on statistical assumptions, describing the extent to which a series of staff-client interactions involves temporal linguistic coupling that are more or less attuned to each other. The aim is to quantify the extent to which linguistic behavior is coordinated in online dyads (Dale & Spivey, 2006). For a better grasp of the dynamics of client-staff online conversations, it would be helpful to capture the extent to which attunement, with respect to the content of the dyads, is associated with attunement with respect to process. In other words, if staff and clients manage to achieve a shared focus on a particular topic, do they also synchronize their behavior, in terms of linguistic coupling (Delaherche et al., 2012)? The following questions will be answered:

- What are the advantages and disadvantages for the client to use WhatsApp conversations?
- To what extent are the different staff- client WhatsApp conversations balanced in terms of power distribution (attunement on a content level)?
- Is the attunement on a content level associated with the attunement on a process level (synchronization of linguistic utterances)?

METHOD

Participants

Staff

Nine staff members (two men and seven women), working at the JP van den Bent foundation in the Netherlands, participated in this study. JP van den Bent is a foundation that provides services to people with an intellectual disability. The role of staff is to support clients with a broad spectrum of daily living tasks, such as helping with household jobs, planning social and vocational activities, arranging appointments, healthcare, and relationship difficulties. Staff members discuss their input with clients and agree on a support action plan, which sets out the nature of support to be given and how it will be provided. The staff members worked in a community-based residential house. Their mean experience of working in services for people with ID was 5.4 years (*Range* = 1.5 – 8.6 years).

Client

The mentor of the client was asked to approach her and to ask whether she would participate in this study.The client is a woman of 23 years. She lives in a community setting, where there is 24-hours support available. The Wechsler Adult Intelligence Scale (WAIS-3) was used to assess her level of cognitive functioning. She has a total IQ of 76. The client has sufficient abilities to express her thoughts and feelings through writing.

Measures

Online dyads

A total of 40 WhatsApp conversations were used that were written in a period of one month. Staff and client exchanged 4971 words (*Mean*=124,3) and 517 turns (*Mean*= 13). The online conversations were required to meet the following criteria: 1) the topic concerned an aspect of the client' support needs, and 2) the conversation encompassed at least three turns for each participant. Five conversations did not meet the criteria and were excluded from the study. Different types of topics were discussed, namely 1) expressing emotions (n = 6), like feeling sad because somebody important passed away, being scared for a dangerous illness, 2) arranging appointments (n = 19), like scheduling the meeting with staff or making an appointment with the doctor, 3) practical questions (n = 6), like asking help with her assurance or with her financial administration, 4) just making conversation to get in contact (n = 5), like saying "hello how are you? "or "is there anybody there?", 5) conflicts with others (n = 4), like a conflict with another client or a friend and 6) discussing problems related to her drug addiction (n = 3).

Procedure

For the selection of the participant, the researcher first obtained permission from the organization to conduct the research. In addition the authors submitted the research proposal to the scientific and ethical committee of the University of Tilburg and this was approved. Managers and psychologists of the JP van den Bent foundation were provided with information about the purpose of the study. Managers of twenty different locations of the JP van den Bent foundation were asked to select clients who have regular online contact with staff through WhatsApp. These clients were all individually approached for the study. They, as well as staff, received an information letter on the purpose of the study. All clients and staff who volunteered for the study were asked for permission from the researcher to use their chats for further analysis. Staff and clients were asked to sent the chats over the past two months to the researcher. Four clients and their staff sent their WhatsApp conversations. From these four one client was selected who had the most frequent (e.g., daily) WhatsApp contact with her staff members. Her WhatsApp conversations with different staff members were transferred into an excel file for analysis (see data collection and preparation).

The client was interviewed during a meeting with the interviewer to clarify her reasons for using WhatsApp conversations. She was asked about the advantages and disadvantages for using WhatsApp in communication with staff . After that, she was asked to mention positive and negative aspects of online communication of each dyad and staff member.

Data collection and preparation

All conversations were inspected for transference errors. The errors manifested themselves in a mix up of sentences between texts and odd displays of special characters. The transference errors were corrected before further data preparation. Originally, the data set used in this study consisted of 517 online posts, containing 4971 words. These online posts were exchanged over a time period of about one month, starting from 23 October until 30 November. All dyad conversations were transferred onto a personal computer in the form of an excel-file. Next, the online posts were arranged in so called turns, that is all consecutive text sent by one party without an intervening post by the other party, were merged into one turn. This approach yielded 289 turns for the client and 228 turns for staff. The data were explored using time series of altered words. The altered-words time series consisted of an adapted version of the original text, in order to highlight the semantics of the texts, yet staying as close to the original text as possible. Table 1 shows the alterations to the original set of texts.

Table 1. Alterations to the Original Set of Texts.

Original text	Modified text	English example
Upper-case characters	Lower-case characters	A > a
Non-alphanumeric characters	Removed	':) > removed
Spelling errors	Corrected or removed when it was not clear what was meant	
Compound words	Separated into their constituting free morphemes	small talk > small talk sleepwalk > sleepwalk
Plural	Singular	bicycles > bicycle
Conjugations	infinitive	goes > go, went > go
Oblique, reflexive and possessive pronouns	Nominative personal pronouns	she > we, her > she mine > I
Diminutives	The noun without its diminutive suffix	duckling > duck
Comparative and superlative form of adverbs and adjectives	Positive form of adverb or adjective	taller > tall better > good
Numbers	Numerals	7 > seven
Numbers referring to time	Numerals	04.00 hours > four hours
Abbreviations	Its unabbreviated original	Dr > doctor
English words	Dutch words	Kid > kind
Texting Slang	Its non-texting original	X > kiss, w8 > wait
Interjections	Standardized	Hahahaha > haha Wauw > wow

For the construction of the time series, all words were recoded into numbers, in such a way that each word was denoted by the same numerical code every time it occurred. This yielded two time series with a *Mean* 66.0 words (*Range* = 14-262, *SD*= 48.5) for the client and a *Mean* 58.3 words (*Range* = 15-335, *SD*= 55.9) for staff for each dyad.

Analysis

Initiative Response Analysis (Linell et al., 1988, Reuzel et al., 2012, 2013)

This analysis aims to capture dominance and coherence in dialogue. Interactional dominance includes the communicative actions, initiatives, and responses taken by the interlocutors. The dominant party is the one who manages to direct and control the other party's actions to the greatest extent and who also avoids being directed and controlled in her or his own interactive behavior. Coherence is created by communicative actions that are relevant to and link-up with the preceding discourse.[1]

According to Linell et al. (1988) an 'ideal dialogue' includes the following conditions:

- Condition 1: It is locally coherent, in that interlocutors try to say things that are relevant to and cohere with the current topic.
- Condition 2: Conversationalists are mutually responsive, in that each of them links up with what the interlocutor has just said.
- Condition 3: It is progressive, in that interlocutors try to contribute the progression of the discourse by providing new material.
- Condition 4: It is coherent, in that interlocutors stick to the main content of the discourse.
- Condition 5: It is non-imposing, in that interlocutors refrain from imposing strong restrictions on the partner's responses.
- Condition 6: It is symmetrical, in that the interlocutors are in control of (and are themselves controlled in) the dialogue on an equal basis.

Note

[1] The explanation of the Initiative Response Analysis method is derived from and therefore almost identical to the description presented by Linell et al. (1988) and Jahoda et al. (2009).

Linell et al. (1988) maintain that the best way of understanding a dialogue is by comparing it with a chain, with the basic unit of analysis being each interactional turn. Each turn is coded for properties of response, or how it is linked to the previous turn, and initiative, which concerns how it links to the next turn. Initiatives continue the dialogue by requesting (soliciting or inviting) a response from the communicative partner and/or by the introduction of a new topic by the speaker itself. Responses ensure coherence with the preceding discourse by linking up to what the interlocutor or the speaker has said. Each turn of the dialogue under analysis is assigned to a particular category. There are 18 categories (plus three non categories: turn miscarriages, back-channel items, and inaudible turns).

- 1. The category system consists of a small set of functions for initiative and response, which are based on the conditions of what Linell et al. (1988) consider essential to an ideal dialogue. These distinguishing features include:

- 2. The distinction between initiative and response: An initiative means that an interlocutor says something in his turn that will progress the conversation and is symbolized by > (strong initiative) or ^ (weak initiative). A response means that an interlocutor links up with the preceding turn and is symbolized by <. Both features, initiative and response, can be used in one turn.

- 3. The strength and scope of initiatives: Initiatives can be divided in strong initiatives, that is (explicitly) inviting or demanding, for example by asking a question, which are symbolized by > and weak initiatives (asserting or submissive), which are symbolized by ^.

- 4. The adequacy of a response: When a response is adequate (accepted) it is symbolized by <. When a response is inadequate or partially accepted, the turn is treated by the interlocutor as not satisfying the turn demands of, or as not even conditionally relevant to, his own preceding initiative (the symbol < is replaced by other options, see below).
- 5. The focality of turns: Focal means focusing on the main content of the other speakers' turn'. A nonfocal link usually involves remarking on or challenging the form or function of the interlocutors' preceding turn. A nonfocal response is symbolized by : instead of < .

- 6. Scope of links: Local vs. nonlocal responses. A local response means linking up with immediately preceding turn. A nonlocal response is a turn being linked to a specific nonadjacent turn further back in the preceding dialogue and is symbolized by.. instead of <.

- 7. Alter or self-linked response: When an interlocutor is linking up with the other speaker's preceding turn it is an adequate response. When an interlocutor links up with the his own preceding turn, it is symbolized by = instead of <.

The entire system of turn types is given, together with brief definitions, in the Appendix. The 18 categories can be ordered on a six-point ordinal scale from the strongest initiative with no response properties to the weakest response without any potential for promoting the dialogue any further (see Table 1).

Table 1. Turn Categories and interactional strengths on the six-point ordinal scale and the percentage of each interactional strength used by staff and clients.

		.. >	.. ^	.. <		
		: >	: ^	(>		
		< =>	< =^	<)		
			=>	= ^	- >	
	>	^	< >	< ^	<	-
Interactional strength	6	5	4	3	2	1
Turns independent and strongly proactive						Turns totally dependent and not at all proactive

Measures of Initiative response analysis (Linell et al., 1988)

For each dyad in this study, the following measures were computed:

1. *The level of asymmetry*. The level of asymmetry is assessed by computing the difference between the level of dominance of the staff member and that of the client.

2. *The level of dominance of clients and staff*. The level of dominance is derived from an initiative response profile. This is a summary of the frequencies of the parties' turn categories on the six-point ordinal scale. The level of dominance refers to the median value of the scores on that scale.

3. *Turn types coefficients used by clients and staff, which are required to examine interactional patterns*. All conversational turns were coded according to four different turn types as described by Linell et al. (1988). The frequencies of various turn types as a percentage of all turns used by each partner in the dyad, yield interaction coefficients.

4. *Turn Types coefficients*

- Expanded Reponses (B-Coefficient, B = Balance): the number of expanded responses as a percentage of all turns in the dyad. This coefficient shows how often an individual responds to what has been said and provides sufficient initiative to allow the dialogue to continue on the same topic.

- Questions (S-coefficient, S = solicitation): the number of questions (or other strong initiatives) as a percentage of all turns in the dyad. This coefficient shows how often individuals explicitly solicit their interlocutors into responding on their initiative.

- Fragmented turns (F- coefficient, F = fragmentation): the number of turns that break the interaction into fragments by the introduction of new and unrelated topics as a percentage of all turns in the dyad. This coefficient indicates how often parties perform abrupt topic shifts, thus contributing to local incoherence or fragmentation of discourse.

- Monologues (O-coefficient, O = obliqueness): the number of turns involving self linking responses as a percentage of all turns in the dyad. This kind of obliqueness is designed to capture how often actors avoid linking up with the main content of their interlocutor's adjacent turn, in spite of the fact that their contribution in question is locally related.

In this study a total of 517 turns were coded. Initial inter-rater reliability coding was carried out with 10 online dyads encompassing 113 turns. There was an overall agreement of 83,2% for using the same codes. Disagreements between raters were discussed and consensus on how these turns should be coded was reached.

Recurrence Quantification Analysis

Recurrence quantification analysis (RQA) was invented to analyse time-series patterns of a single system, referred to in this study as auto-RQA or ARQA. Cross- or CRQA is an extension of ARQA that provides the possibility of analysing time series of two coupled systems (Marwan, Thiel, & Nowaczyk, 2002). RQA quantifies, amongst other parameters, the number of data points that recurs at another point in time (recurrence rate) and the portion of recurrent measures that are part of a larger recurrent pattern (determinism). Another important measure that is derived from CRQA is the extent to which one of the participants in the coupled dyad system is leading, or for that matter following. In other words, is one of the participants taking the lead more often in establishing recurrence?

In the majority of cases the time-series of a coupled system, that is, the behaviour of interest is assessed at the same time for both participants in the dyad. For example, two people are talking to one another and the behaviour of interest may be the amount of time both persons are looking at each other.

This particular behaviour may occur at the same time, but also at different times. These recurring behaviours can be analysed using a distance matrix (Orsucci et al., 2006). This matrix is the result of a time-delay embedding, which creates surrogate dimensions for the reconstruction of a phase space. The graphical representation of the distance matrix is called a recurrence plot: A matrix with dots indicating recurrence (Marwan, Carmen Romano, Thiel, & Kurths, 2007; Marwan & Kurths, 2002; Zbilut, Giuliani, & Webber Jr., 1998).

In the current paper there is no coupling at the same time, because the WhatsApp conversations occur in sequence. It is nevertheless possible to assess whether or not the words that the client and the staff members use recur at a later point in time. The percentage of recurring words of the client is the Auto Recurrence Rate or Auto-RR-client, for the staff members it is Auto-RR-staff; the Cross Recurrence Rate (Cross-RR) is the percentage of words uttered by one person (client or staff) that were found to be repeated by the other person. The same can be done for determinism, which refers to the recurrence of sequences of words, again either within the client's or staff's own response (ARQA) or between staff and client (CRQA).

With respect to who is leading the conversation and who is following, an example of the procedure is illustrative. Assume the client posts a message, which was replied by staff. The obtained time series for these two messages (or better: turns) were analysed by means of CRQA. The resulting RR then reflects staff repeating words written firstly by the client. Hence, the RR reflects the magnitude to which the client leads the conversational synchrony until so far. If the client then replies the initial response of staff, the RR reflects the magnitude to which staff leads the emergence of recurrence, then consisting of the latter two turns. This analytical procedure was followed for all pairs of turns, yielding a RR ratio client (RR client/total RR) and one for staff RR ratio staff (RR staff/total RR). The difference between these two ratios represents the relative leading behaviour, in which a positive value indicates that the client leads the interaction, versus a negative value that represents leading behaviour of staff.

This adaptation of RQA was first used by Radstaak (2012) in his master thesis to analyse text-message conversations between a client with anorexia and her therapist. In the current paper, both ARQA and CRQA measures were used. The parameters used in this study were recurrence rate, determinism, and conversational leading and following.

RESULTS

In total 40 WhatsApp conversations between a client and 9 different staff members were analysed. The Whatsapp conversations included 517 turns for clients and staff. The client used 2641 words and staff used 2330 words together.

What are the advantages and disadvantages for the client to use WhatsApp conversations?

The client texted daily with staff. She stated that she used WhatsApp to communicate with staff because it was easier for her to text then have a face-to-face conversation. She used WhatsApp when she had to share her troubles and when she had a practical question. The advantages of WhatsApp conversations is that it was free of costs for her and that it was always available when she had a question. According to her a disadvantage of using WhatsApp is that it can have technological problems and it is easy to misunderstand each other by misinterpreting what has been written. Another disadvantage the client mentioned was that she was not able to erase the WhatsApp conversations. They remained in her telephone and she was afraid other people might read them later, which would affect her privacy.

The client said that she liked the online communication with staff when they were clear. By clear she meant that staff clearly states who they are, so she knows whom she's talking to. She also appreciated when staff made clear appointments and when they indicated whether they had time to app or not. She also appreciated the online communication with staff when she felt heard, staff who understood her and took time to listen to her.

To what extent are the different staff- client WhatsApp conversations balanced in terms of power distribution?

First we have analysed the balance of power by using the initiative-response analysis of Linell et al (1988). This will provide insight in the ability of staff and clients to actively contribute to and sustain a shared online dialogue. Second we will provide quantitative measures of the number of words in which the client or staff took the initiative. With the latter we mean words first used by the client or first used by staff. This will provide information on who is leading and who is following the conversation.

Balance of power according to the Initiative Response Analysis

The level of asymmetry scores shows the extent to which WhatsApp conversations were symmetrical or dominated by the staff or the client. The results reveal that the mean level of asymmetry was .40 (*SD* = .69, *Min* = -.1.0, *Max* = 1.0), suggesting a reasonable balance of power in the WhatsApp conversations, when compared with previous findings concerning a variety of communicative partners (Linell, 1988). The mean level of asymmetry falls in the range of informal conversations between friends.

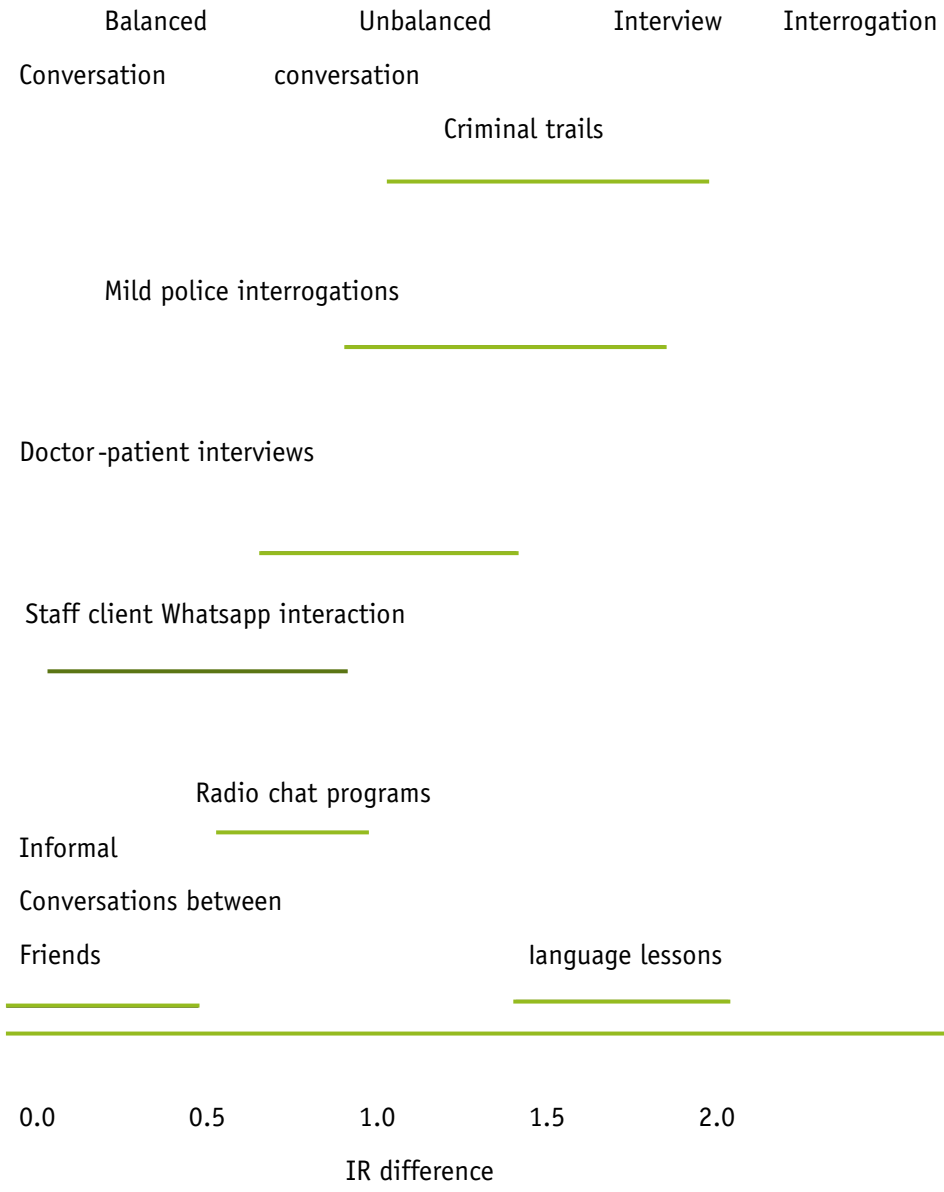

Figure 1. Power balance in various types of conversation (Linell et al., 1988)

However, when we look at the WhatsApp conversations individually, we see that 15 dialogues fell in the range of informal conversations between friends, 6 conversations fell in the range of a radio-chat program, and 19 conversations in the range of a doctor-patient interview or even police interrogations and criminal trials.

The level of dominance of client and staff

The level of dominance refers to the global measure of power or being controlled during WhatsApp conversations. In 13 interactions the client was slightly more dominant then staff and in 12 WhatsApp conversations the staff member proved to be slightly more dominant. In the other 15 conversations, the balance of power was equal. A paired samples t tests showed a non-significant difference between the level of dominance of staff and clients, $t(8) = .56$, $p = .59$). The *Mean* level of dominance of the client was 3.2 (*Range* of 3.0-4.0 and *SD* = .44), and that of all staff members was 3.1 (*Range* of 3.0-4.0 and *SD* = .33).

The overall asymmetry and dominance scores mask the complexity of the interactions revealed by this sophisticated method of interactional analysis. Therefore, the next section will outline how the communicative acts of staff and the client were related to the balance of power in the dialogues.

Table 2. Associations between Turn Types and the Level of Dominance of Client and Staff, the Asymmetry Level, respectively.

	Dominance					
	Client		Staff		Asymmetry	
	r	*p*	*r*	*p*	*r*	*p*
Expanded responses client	**-.43**	.006	.18	.23	**.38**	.02
Questions client	**.59**	.001	-.21	.19	**-.50**	.001
Fragmented turns client	**.39**	.01	**-.35**	.03	**-.46**	.001
Monologues client	.06	.73	.06	.73	-.00	.99
Expanded responses staff	**.45**	.001	**-.74**	.001	**-.73**	.001
Questions staff	**-.51**	.001	**.76**	.001	**.78**	.001
Fragmented turns staff	-.12	.48	.16	.33	.17	.3
Monologues staff	.15	.37	-.1	.54	-.15	.34

Note. The correlations in bold type font are significant.

Table 2 shows that the level of dominance of the client was positively associated with her asking questions and by using fragmented turns. With the latter we mean turns that do not connect to previous turns but encompasses sudden subject changes, for example by introducing a new topic. The client's level of influence on the WhatsApp conversation was negatively associated with her providing expanded responses to staff's contributions. Staff's level of dominance was also associated with them asking questions and negatively associated with them responding to the client.

The influence of the client on the conversations by asking questions and using fragmented turns was associated with a more balanced interaction in terms of power distribution. Her responses to staff were associated with more asymmetry. The questions asked by staff were also associated with more asymmetry in the power distribution. When staff responded to the client, there was more balance. Table 3 sets out an extract of a conversation dominated by staff and a conversation dominated by the client.

Table 3. Example of a Conversation Dominated by Staff (a) and Client (b)

Excerpt A		Excerpt B	
Client: Diana, can I have 6 euro of my saving money, so I can order food?	(>	*Client: Why are you ignoring me?*	>
		Staff: busy busy busy	<^
		Client: Who has the telephone?	<>
Satff: It is your money, but don't you rather save it?	<>	*That's no reason to ignore me*	
		Staff: Anouk has the telephone.	< ^
Client: I forgot to put my food out of the freezer	<^	*At nine my attention is completely yours*	
Staff: Microwave?	<>	*Client: TSS, I'm only saying that*	<^
Client: No, tastes no good and is deeply frozen.	<^	*I'm outside. You could say ok or something*	
Staff: Oke, come and get it	<^	*Staff: We could, but sometimes*	<^
Clients; Oke, then I come and get my medication also	<^	*we don't have time. We are doing other things beside drinking coffee*	
		Client: Haha	<^

In Excerpt A, we see that the staff member tries to guide the content of the interaction by bringing in new input. She clearly does not only respond to the client, but asks critical questions. In Excerpt B it is the client who drives the content and the staff member responds to her.

Leading following

The conversational leading and following (CLF) behaviour was also assessed with CRQA (see analysis). The Mean number of leading words of the client was 10.5, (*SD* = 13.3) and significantly higher than that of staff, which was 8.4 (*SD* = 1.7), $t(39) = 2.1$, $p = .045$. There is also a strong correlation between number of leading words of client and staff $r = .88$, $p < .001$. This means that when the client initiating new words encouraged staff to do the same and vice versa, thereby creating a dyadic conversation with a substantial diversity in used words.

Is the attunement on a content level associated with the attunement on a process level (synchronization of linguistic utterances)?

In this section we will present the results of the associations between attunement on a content level and attunement on a process level. That is, the level of dominance and balance of staff and the client during their Whatsapp conversations and their use of different types of turns on the one hand will be correlated with the level of linguistic coupling on the other hand. The level of linguistic coupling means the similarity in words used by staff and client (e.g. the cross recurrence rate) and the similarity in sequences of words used (e.g. cross determinism). Table 4 presents the results of associations between measures retrieved from the Initiative Response Analysis and the ARQA and CRQA measures, Recurrence Rate and Determinism.

Table 4 suggests a trend between dominance and balance on a content level, the use of different turn types and the coupling of linguistic utterances. Although the associations are not significant, the results give the impression that unbalanced conversations are correlated to more auto recurrence. This means that staff and client have a tendency to repeat their own words more often, when there is more difference in dominance. When the client has more influence on the content of the conversation (higher level of dominance), staff have a tendency to use fewer similar words. This is especially the case when the client asks questions. The client asking questions is also negatively associated with the coupling of linguistic utterances. This means that the client's influence on the conversations is associated with a decrease of cohesion in used words. When the client holds monologues, she has a tendency to use more similar (sequences of) words. The coupling of linguistic utterances between staff and client is also positively associated with the client using monologues. The use of fragmented turns, for example by suddenly changing the subject, is associated with the client using fewer similar words.

Table 4. Correlation between Measures at Content level (IRA) and Process level (ARQA and CRQA). Significant levels are in bold font type

	ARQA RR client		ARQA RR staff		CRQA RR	CRQA RR	ARQA DET client		ARQA DET staff		CRQA DET	
IRA	40 single convers.	Per staff member	40 Conv.	Staff	40 Conv.	Staff	40 Conv.	Staff	40 Conv.	Staff	40 Conv.	Staff
Client dominance	-.25 .13	-.63 .07	**-.32** **.05**	**-.67** **.05**	-.20 .22	-.63 .07	-.16 .31	-.52 .15	-.16 .34	-.13 .75	.17 .31	-.15 .70
Staff dominance	.24 .13	.34 .37	.14 .39	.36 .34	.18 .26	.38 .31	.03 .88	.52 .15	**.32** **.04**	.65 .06	-.06 .74	**.76** **.02**
Level of asymmetry	.30 .06	.65 .06	.26 .08	**.70** **.04**	.24 .14	**.67** **.05**	.12 .46	**.67** **.05**	.29 .07	.45 .22	-.14 .40	.53 .14
Client expand. responses	.02 .91	.30 .43	.03 .88	.20 .6	.10 .55	.17 .65	-.07 .65	.53 .14	-.03 .85	.03 .93	-.04 .79	.13 .73
Client fragmented returns	**-.34** **.03**	-.40 .30	-.04 .81	.06 .88	-.10 .54	-.11 .77	-.03 .86	**-.73** **.03**	-.11 .52	.20 .60	.09 .60	-.23 .55
Client monologues	**.36** **.03**	.64 .06	.23 .15	.56 .12	**.36** **.02**	.65 .06	**.54** **.001**	.46 .21	-.04 .81	.01 .98	.23 .15	.14 .71
Client questions	-.15 .34	**-.78** **.01**	**-.35** **.03**	**-.90** **.001**	**-.33** **.04**	**-.86** **.001**	-.24 .14	-.52 .16	-.05 .76	-.26 .49	.10 .54	-.30 .49
Staff expand. responses	-.27 .10	-.55 .13	-.30 .064	**-.75** **.02**	**-.34** **.03**	**-.69** **.04**	-.07 .65	-.40 .30	-.18 .27	-.58 .10	.17 .31	-.53 .15
Staff fragmented returns	.23 .64	.52 .15	.08 .63	.40 .28	.17 .29	.56 .12	.13 .42	.12 .76	-.07 .67	-.07 .85	-.21 .19	.12 .76
Staff monologues	.07 .64	.09 .82	.14 .4	-.17 .66	.10 .55	-.02 .96	-.11 .48	-.24 .54	.08 .63	**-.77** **.02**	-.21 .19	-.60 .09
Staff questions	.29 .07	**.71** **.03**	.21 .20	**.71** **.03**	**.32** **.04**	.71 .03	.18 .26	**.76** **.02**	.20 .22	.48 .19	.16 .34	**.70** **.04**

Note. The analysis were done using the 40 conversations separately (conv.) and per staff member (staff)

As Table 4 shows, staff's level of dominance is positively associated with them using similar sequences of words. When staff asks questions, there is more linguistic coupling and when staff responses to the client's turns, there is less linguistic coupling. This means that staff's influence on the conversation is associated with an increase of cohesion in used words. Table 5 provides two excerpts; 2A is an example of a conversation in which staff uses a relatively high number of questions and in which there is a relatively high level of linguistic coupling, whereas 2b is an excerpt of a conversation in which the client uses a relatively high number of questions with a low level of linguistic coupling.

Table 5. Example of a conversation with a relatively high level of linguistic coupling and a relatively low level of linguistic coupling.

Excerpt A	
Mean questions asked by staff RR Cross	1.0 .09
Client: Sara? *Staff: Yes…?* *Client: Could you bring my money and everything and medication for tomorrow and will you help me with the list of grocery's? En do I get back that food money from Saturday? That was chicken, potatoes and spinach* *Staff: I see that you have 30 euro in your envelop left.. do you want all? And I shall look for the food money from Saturday. You do get that back.* *Client: Ok, yes do that, cause I don't now how it is with the grocery's. How much I do have to get, since you are eating with me more often. And I'm home by the way* *Staff: Ok, I get that, lets look together at your grocery's list. I will bring it all, ok? I will be with you at nine.* *Clients; Is ok*	(> <> => <> <^ <> <

Excerpt B	
Means questions asked by the client RR cross	.57 .03
Client: Who is going with me for a walk? *Staff: Good enough with Eli? Greetings Sara* *Client: Haha, only with Eli is ok?* *Staff: Is ok* *Client: no I mean is there anyone else going?* *Staff: no only with Eli, I've got something else to do.* *Client: but you are with four isn't it?* *Staff: No with 2 at the moment* *Client: Ow, haha…uhm, I think you haven't done the update for WhatsApp* *Staff: But we have blue marks*	> <> <> <^ <> <^ <^ <^

Note. The mean level of questions asked by staff of the 40 WhatsApp conversations was .32 (SD = .24) and that of the client was .25 (SD =.19). The mean Cross Recurrence Rate between staff members and the client was .06 (SD = .02).

In Excerpt A the client brings forward a number of issues and the staff member creates linguistic coherence by addressing her issues and asking for verification ("do you want all?" or "Is that ok?") In this example the staff member sticks to the main topics, namely the grocery list and food money, despite the fact that the client mentions other issues like medication and that she's home. In Excerpt B the client also brings forward several issues. Staff responds to the client by answering her questions. However, simply responding to the clients' initiatives does not create linguistic coupling in this excerpt. The client uses a variety of topics and consequently a diversity in used words. When staff only reacts on these divers topics, the conversation is fragmented. Unlike Excerpt A staff in Excerpt B does not ask questions in order to create coherence in the conversation.

Discussion

In this study we investigated communication patterns during WhatsApp conversations between staff and a client with ID. More specifically we investigated patterns of dominance and balance and whether these patterns were associated with the synchronization of linguistic utterances. The interactional patterns found in this study were measured with one client only. The results can therefore not be generalized to a larger population. This was an exploratory study and it may be illuminating to carry out a larger scale study of this nature

in order to ascertain whether patterns found in the present study reflect those in different WhatsApp contexts. The WhatsApp conversations were also relatively brief, with a mean number of 13 turns per dyad. Although they do seem to lend themselves for nonlinear time series analysis and interactional-response analysis, it would be interesting to investigate interactional patterns during WhatsApp conversation with a more substantial length.

Since online communication between staff and clients is an upcoming phenomenon, we were firstly interested in the client's motives to use this mean of communication. The client used WhatsApp when she wanted to share her thoughts and feelings (trouble telling) and when she has practical questions and because it is always available and free of cost. She appreciated being listened to and feeling heard. Her report is in line with studies that included clients' perceptions on the quality of face-tot-face contacts and their relationship with staff. For example, some studies found that in addition to valuing helpful advice and practical support during face-to-face meetings, clients also appreciated being able to tell their story and having reliable support (Clarkson, et al., 2009; Reuzel et al., 2015, Roeleveld, et al., 2011). Both clients and staff thought it was important to have a trusting relationship. For the client participating in this study, the online communication seems to serve similar functions as face-to-face communication.

Moreover, a growing body of knowledge reveals that online communication may have a similar impact and is capable of replicating the facilitative conditions of face-to face encounters (Richards & Vigano, 2013). Barak, Hen, Boniel-Nissim, and Shapira (2008) evidenced that the use of online interventions during therapy sessions are as efficacious or nearly as efficacious as face-to face contacts. Cohen and Kerr (1998) reported that there were no differences regarding ratings of depth, smoothness, or positivity between online and face-to-face contacts between professionals, like therapists, and clients. Barak and Bloch (2006) investigated the perceived helpfulness of emotional support carried out by therapists through Internet chat with distressed individuals. These findings do not support common criticism that online conversations are shallow, superficial or distant (Barak & Bloch, 2006). This suggests that online support can be a valuable complement to face-to-face support.

A disadvantage of WhatsApp according to the client is that written text can easily be misinterpreted. WhatsApp lacks important nonverbal face-to-face characteristics, such as, tone of voice and facial expressions, which can aid the conversation. Online communication is also characterized by unique features and behaviours such as disinhibition, distance, time delay, convenience, and loss of social signalling (Richards & Vigano, 2013). For example a time delay can lead to anxieties, wondering about the delay in response, which in turn can lead to projection of one's own expectations and emotions, such as, the black hole phenomenon (Suler, 2004). Thus, online communication requires specialized skills and staff using online communication should be trained in knowledge and skills on how to establish a relationship online and how to communicate effectively. Training programs have been developed that promote the development of specialized skills for effective provision of online counselling (Anthony & Goss, 2003)

Reuzel et al.'s study (resubmitted) revealed that staff focuses on the empowerment of clients and considers communication that enhances the self-efficacy of clients important. We, therefore explored the patterns of dominance and balance during the WhatsApp conversations. In general the WhatsApp conversations were reasonably balanced based on Linell et al.'s (1988) initiative response analysis. The level of asymmetry of WhatsApp conversations between staff and clients in this study were akin to scores obtained from informal conversations between friends. On closer examination, there was a wide variety of scores concerning the level of asymmetry for the 40 different WhatsApp conversations and almost half of the dyads represented the range of a doctor- patient interview, a police interrogations or a criminal trial. This suggests that during half of the investigated WhatsApp conversations either staff or the client directed the content of the dyad for a major part. Reuzel et al. (2012), found that during face-to-face meetings, staff's level of dominance was significantly larger then client's level of dominance in a majority of the dyads. In the present study, in 13 interactions the client was more dominant then staff and in 12 WhatsApp conversations the staff member proved to be more dominant. In the other 15 conversations, the balance of power was equal. This might implicate that the WhatsApp conversations allowed the client to play an active role in the dyads.

This implication is strengthened by the result that the client initiated new words significantly more often then staff, which suggest that she is most often leading the content of the conversations. Other studies, such as in therapeutic contexts, found that clients participated more actively during online communications compared to face-to face contacts (Day & Schneider, 2002) The researchers speculated that perhaps the distance made the client feel more comfortable. Advantages of online communication may include convenience, anonymity, and privacy (McMurtry & Hudson, 2000). Thus, individuals presented with specific issues, such as social anxiety, may need to communicate without fearing the other person's reaction (Liebert & Archer Jr., 2006). Another possible explanation of the relatively high level of dominance of the client during the WhatsApp conversations is that text messages allow the client sufficient time to process information and to regulate and formulate her thoughts (Suler, 2000). There are several studies that indicate the cognitive load of face-to-face interactions for clients with ID (Bradshaw, 2001; McConkey et al., 1999; Purcell et al. 1999; van der Gaag, 1998) and in this light the delay in processing information while texting can empower the client.

The time delay brings a relief from any pressure of urgency, which in turn, can facilitate time to process experiences and emotions, reduce impulsivity and enable clients to engage in deeper reflection (Hanley, 2009) However, care needs to be taken in the interpretation of these findings, since this study has been undertaken with one client only. The relatively high level of dominance of the client might also be explained by the character of the client.

During the face-to-face conversations between staff and clients with ID, Reuzel et al. (2012) found that staff's level of dominance was mainly determined by asking questions and client's level of dominance by the use of expanded responses and holding monologues. During the WhatsApp conversations the level of dominance of both staff and client was characterized by the use of questions and a decrease of dominance was visible by responding to one another. These results also suggests that the client had an active role in the dyads by asking questions. It might be the case that WhatsApp interactions have a different character compared to face-to-face meetings, like being more functional. Instead of mutually responding to each other and holding monologues, it encourages a pattern of asking and responding. Looking at the nature of the WhatsApp conversations we saw that twenty-five of the forty conversations have a practical goal, like arranging appointments. However, in the other 15 conversations, different issues are discussed like emotions and problems the client encountered. It would be interesting to know whether different types of WhatsApp conversations are related to different interactional patterns. This is an area that needs further investigation. The results revealed different interactional patterns on a content level and more initiatives from the client, compared to face-to-face interactions.

Another interesting issue was whether interactional patterns on a content level are related to attunement on a process level. Interactional patterns on a content level were indeed related to linguistic coupling. More specifically, the questions asked by staff were related to coherence in used words and the questions asked by the client created more diversity in used words. This aligns with a previous study by Reuzel et al. (2014), who found that staff used their verbal skills to enhance attunement with clients by synchronizing their turn taking patterns. In the present study, it also seems that staff is more capable to drive the dynamic synchronization of behaviour. Interestingly, the current study revealed that staff 's responses to the client's initiatives created less synchrony. A possible explanation is that the client had a large variability in the topics she brought up. Staff simply reacting on these topics would not create coherence in the conversations. Only when staff directed the content of the conversation by asking questions, and possibly bringing back the client to the main topic, there was more stability in linguistic coupling. The idea that the client created less synchrony is substantiated by other studies. Other studies revealed that interactional synchrony breaks down when people have particular social-cognitive deficits such as autism (Isenhower et al., 2012; Trevarthen & Daniel, 2005). Staff, thus, have an important task in guiding conversations with clients with ID by structuring, summarizing, and asking questions.

The ability of staff to synchronize with clients is closely linked with rapport building, the smoothness of a social encounter, and cooperation efficiency (Delaherche et al., 2012; Miles, Griffiths, Richardson, & Macrae, 2010). Reuzel et al. (2014) also revealed that interactional synchrony was related to client's perceived quality of interactions. Due to privacy reasons, we did not investigate whether the interactional patterns found in this study were related to the experienced quality of the conversations. For future research it would be interesting to investigate whether the level of synchrony and interactional dominance during online communication are related to feelings of connectedness and collaboration.

Our study has shown that the use of online communication holds promises for establishing collaborative relationship between staff and clients with ID. Online communication can be used for different types of conversations and allows clients to play an active role. Possible advantages of chatting includes that conversations can be of lower emotional intensity, there is more time to think, the power balance seems more equal between parties, and clients can be more focused and expressive (Richards & Vigano, 2013). As in face-to-face interactions staff use their skills to enhance attunement on a process level. During WhatsApp conversations staff create coherence in linguistic utterances by asking questions. This means that staff have an important role in guiding the conversations. Since online communication requires specialized skills, it is important to train staff accordingly.

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CHAPTER 7

SUMMARY AND GENERAL DISCUSSION

The purpose of services for people with intellectual disabilities (ID) is to support people's needs (Bellamy, Newton, LeBaron, & Horner, 1990). The core quality of life domains, such as interpersonal relationships, personal development, self-determination, autonomy, and the emotional wellbeing of people with ID directly depend on what happens in the interaction between support staff and clients (Schalock, 2004). In this context, interactions between support staff and clients with ID are crucial for the services' success in meeting people's needs (Social Exclusion Unit 2005, p. 57). Researchers often assume that interactions can be analysed from a linear perspective, which views communication as the contribution of individual acts (Linell & Markova, 1993; Markova & Linell, 1996).From a linear perspective, these individual acts are associated with individual acts of the other interlocutor. However, an essential feature of interaction is how each person's nuanced actions shape the other's as the joint action unfolds (Stevens, Gorman, Amazeen, Likens, & Galloway, 2013). Knowledge on interactional patterns between staff and clients with ID is essential in understanding the nature of their collaborative relationship. De JP van den Bent stichting, a Dutch foundation that provides services to people with an intellectual disability, acknowledged this need and funded this thesis about interactional patterns and attunement during staff-client interactions.

The present thesis dealt with interactional patterns between support staff and clients with ID during their regular meetings. More specifically, the interactional patterns were explored for the level of attunement, which we defined as the reciprocity of staff-client behavior when interacting. The level of ID of participating clients ranged from mild to borderline (e.g an IQ between 50 -75). The attunement and interactional patterns between support staff and clients were investigated at different levels and in a different context. Additionally, the obtained patterns were associated with the experienced quality of the interactions. This thesis contains measures and analysis that are new in the field of support staff and client communication, like Cross and Auto RQA and the Initiative –Response Analysis (Linell, Gustavsson, & Juvonen, 1988). We used both qualitative and quantitative procedures to analyse our data. Moreover, the implications are relevant with respect to clinical practice as well as future research.

Results and interpretations

Attunement on a content level

At the content level, support staff and clients must reach a mutual understanding and common ground of what is said to achieve a balanced interaction. It is not just about who raises the topics being discussed or how much each individual talks, but it also pertains to how to sustain and actively contribute to a shared dialogue (Linell et al., 1988, Jahoda, Dagnan, Kroese, Pert, & Trower, 2009). Study 1 (Chapter 2) captured the nature of dialogue between support staff and clients with mild to borderline ID from an interactional perspective. Linell's et al. (1988) innovative method of interactional analysis was used to examine the pattern of interactional dominance between support staff and clients during their regular face to face meetings. Results revealed that support staff were more dominant than clients, albeit the level of asymmetry in the dialogues was relatively small. Comparisons with previously published data showed that the mean scores of the level of asymmetry of social interactions between support staff and clients in this study were akin to scores obtained from informal conversations between friends (Linell et al., 1988).

However, a different pattern of turns was used by support staff and clients. Support staff asked more direct questions and sometimes neglected meaningful client contributions. Clients, on the other hand, provided more extended turns in response to staff members' questions, thereby helping to maintain the dialogue. This suggested that the questions asked by support staff could enable clients to play an active role in the interaction. However, in a notable minority of communicative turns, the clients failed to link with the staff member's contribution and persisted in their own monologues. Support staff also used monologues and these turns may be related to competition. There appeared to be tensions about who was in charge of the interaction. When clients tried to control the interaction by asking questions, support staff performed more abrupt topic shifts, possibly trying to bring the client back to their agenda. As a reaction, clients may have increased their use of fragmented turns. This suggests that there may have been a tension between the clients' goals and those of support staff during the dialogues.

The interactional patterns found in this study suggest that support staff and clients can face difficulties establishing collaborative dialogues on shared topics. These results are in line with findings of other studies on staff - client interactions. For example, Antaki and Rapley's (1996) sophisticated investigations of interactions between psychologists and people with ID have shown how views can be distorted or ignored by dominant communicative partners. Other studies have also indicated that support staff tend to favour the use of directives and questions and may fail to adjust their language to the client's level of understanding (Jingree, Finlay, & Antaki, 2006; Leudar, 1981; McConkey, Morris, & Purcell, 1999). Hence, clients seem to be presented with few opportunities to engage as equal partners in conversational interchanges. Social interaction, however, consists of both verbal and non-verbal communication, including facial, vocal, and postural transfer of information (Winkielman, McIntosh, & Oberman, 2009). Consequently, non-verbal patterns of interaction between support staff and clients provide important additional information about how they communicate and the power relationships.

Attunement on a process level

In Study 2 (Chapter 3) interactional patterns between support staff and clients with ID on a process level were examined. More specifically, the attunement and synchronization of two specific non-verbal behaviours, namely gaze direction and turn-taking behavior were explored. A nonlinear time-series analysis technique called Recurrence Quantification Analysis (RQA) was used to examine the nonverbal patterns of synchronization of staff and client dyads (e.g., Church, 1993; Eckmann, Kamphorst, & Ruelle, 1987; Marwan, Romano, Thiel, & Kurths, 2007; Von Heijne, 1987; Zbilut & Webber, 1992; see Dale and Spivey, 2005, for a review, and Webber & Zbilut, 2005, for an excellent technical introduction).

The synchronization of turn-taking behavior found in this study showed that staff and clients reached an optimal point at which their tendencies to be talkative alternated, resulting in fewer interruptions and silent pauses. This optimum is a measure of the level of attunement and was absent for gaze direction. These findings are consistent with the mutual entrainment of speech rhythms found in other studies, for example in studies on conversations between psychology students (McGarva & Warner, 2003). The level of synchronization was associated with the observed quality of the interaction by independent support staff and client observers. The client observers appeared to be more sensitive to this synchrony or to value it more highly than the support staff raters. Support staff observers were sensitive to quantitative measures of talking. The more support staff in the interactions talked the lower the quality rating of the interaction. The more the clients talked, the more positively the support staff observers rated the interactions. This suggests that clients are sensitive to the underlying dynamics that occur during social interactions.

According to Delaherche, Chetouani, Mahdaoui, Saint-Georges, Viaux, and Cohem (2012) the ability to synchronize with a partner is closely linked to rapport building, the smoothness of a social encounter, and cooperation efficiency. Therefore clients might be aiming at enhancing good relationships with support staff. Although the association found between clients' ratings of the quality of the interactions and the coordination of speech patterns is remarkable, we did not know the precise role or function of the synchronization in staff-client social interactions. For a better grasp of the dynamics of staff-client conversations, we went on to capture the extent to which attunement, with respect to the content of the interaction, was associated with attunement with respect to process. In other words, if support staff and clients manage to achieve a shared focus on a particular topic, do they also synchronize their behavior, in terms of the timing of their verbal contributions and turn taking (Delaherche et al., 2012)?

Interactional dominance and attunement on a process level

Study 3 (Chapter 4) investigated whether verbal interactional dominance and balance, an indication of attunement between support staff and clients with ID on a content level, were associated with synchrony of turn-taking patterns during staff-client interactions. The study also investigated whether the level of dominance and balance was related to the observed quality of the social interactions. The interactional analysis found that support staff and clients' patterns of verbal interactional dominance and balance were associated with the synchrony of their turn-taking behaviours. Support staff's dominance was associated with a higher level of synchrony of turn taking, whereas client's dominance was associated with a lower level of synchrony. This suggests that support staff may have used their verbal interactional skills to enhance attunement with clients in taking turns during speaking, and because support staff is relatively more capable than clients are, they tend to drive the dynamical synchronization of turn-taking behavior. The patterns of verbal interactional dominance and balance were associated with support staff observer reports about the quality of the interactions. Support staff observers considered clients' influence on the content of the interaction to be positive.

Support staff are sensitive to interactional dominance and associate a more dominant client with higher quality interactions. Therefore, they seem to place emphasis on a client's self-efficacy which fits with client-centred approaches. It is possible that support staff view empowerment or client-centered approaches to signify that clients literally 'hold the floor.' This contrasts with the more nuanced dynamical patterns that reflect greater reciprocity between support staff and clients. It is important to note that support staff observers seemed not to have detected these skills. Clients, on the other hand, are sensitive to synchrony, and may therefore be more concerned with enhancing good relationships with staff. These findings align with a study by Ramseyer and Tschacher (2011), who investigated non-verbal synchrony between patient and therapist during psychotherapy sessions. They evidenced that non-verbal synchrony was associated with therapy outcome and patients' view of the therapy process.

These results suggest that support staff and clients have a tendency to be sensitive to different aspects of interactions. In general, support staff proved more sensitive to dominance and balance both with respect to verbal and non-verbal behavior, whereas clients appeared sensitive to the synchrony of turn-taking behavior. The different aspects of social interactions that clients and support staff are sensitive to may have different functions. For example, Ramseyer and Tschacher (2011) found that therapists' pacing (or being responsive to the non-verbal behaviour of the other interlocutor) was positively associated with patients' self-efficacy, while therapists' leading (initiating the non-verbal behaviour) corresponded positively with patients' relationship rating. Therefore, we continued studying what support staff and clients wanted to achieve in dialogues, along with the nature of what they find important in a collaborative relationship.

Staff client perspectives on their regular meetings

Client-centred models of care emphasise the importance of collaborative working between support staff and clients. Yet there has been little research about how clients perceive the nature of their meetings with support staff members. In order to gain a better insight into the quantitative analyses of the interactions in Studies 1 to 3. Study 4 (Chapter 5) reports on another strand of work concerning these interactions. We investigated the expectations or goals of support staff and clients about their regular meetings and what they saw as the important aspects of their meetings.

Interviews were carried out with nine client and support staff dyads. Prior to their weekly meeting, participants were asked about their expectations. Afterwards, participants were asked about their view of what had happened during the interaction. The participants' answers were thematic analysed. In addition to valuing helpful advice and practical support, clients appreciated being able to tell their story and having reliable support. Both clients and support staff thought it was important to have a trusting relationship. This finding is consistent with other studies where clients placed emphasis on their relationship with support staff (Clarkson, Murphy, Coldwell, & Dawson, 2009; Kilbane & Jahoda, 2011; McVilly, Stancliffe, Parmenter, & Burton-Smith, 2006; Roeleveld, Embregts, Hendriks, & Van den Bogaard, 2011). An issue that was only mentioned by support staff was a wish to promote clients' autonomy. Hence, support staff concerns with self-efficacy may not always be in keeping with clients' wishes and expectations. Our findings point to a potential tension between policies and practices for support staff. On the one hand they are encouraged to enhance clients' self-efficacy and independence, and on the other hand, clients with intellectual disabilities express a clear need for support and help (Donner, Mutter & Scior, 2010). In other words, while encouraging autonomy, the vulnerability and need for support of people with ID should not be forgotten (Embregts, 2009; 2011).

Whether or not the meetings helped to foster the clients' wider sense of self-efficacy in their lives, staff appeared to be aware of how to adjust their communication to enhance their attunement with clients. For example, support staff talked about using language that clients could comprehend, carefully pacing the conversation and checking to ensure there was mutual understanding about what had been said. These findings were in line with the results of Study 3 (Chapter 4), where we found that support staff made efforts to synchronize their interactions with clients. The ability of support staff to synchronize with clients not only helped to build rapport, but was also closely linked with greater cooperation between the communicative partners (Delaherche et al., 2012). This suggests that support staff may have the skills to help empower clients as partners in an interaction.

Previous four studies revealed that in general during face-to face meetings support staff and clients were able to reach attunement on both a content and on a process level.

Staff seemed to use their skills to enhance the attunement. However, recently a new form of interacting is rising, namely online communication. We therefore went on to investigate interactional patterns of dominance and synchronization during online communication.

Attunement during online conversations

Since we live in a digital world and access to support becomes even more mobile, the need and demand for advice through the internet gets increasingly more critical. In Study 5 (Chapter 6) we investigated how staff and a client with an ID interacted on WhatsApp. We wanted to determine whether their online behavior is synchronized and what the patterns of dominance and balance are. We also wanted to know the reasons for the client to use this mean of communication. Forty WhatsApp conversations between nine different support staff members and a single client were analysed using Cross RQA and the Initiative –Response analysis by Linell et al, 1988. In this study, synchronization was defined as the coupling of linguistic utterances. In addition the client was asked what her motives were to use WhatsApp.

The client used WhatsApp for practical questions, but also for expressing her thoughts and feelings. She appreciated being listened to and feeling heard. Her report is in line with studies that included clients' perceptions on the quality of face-tot-face contacts and their relationship with staff. In Study 4 (Chapter 5), we found that in addition to valuing helpful advice and practical support during face-to-face meetings, clients also appreciated being able to tell their story and having reliable support (see also Clarkson, et al., 2009; Roeleveld, et al., 2011). Therefore, some of the WhatsApp conversations seemed to serve similar functions as face-to-face communication. This idea is supported by a growing body of knowledge revealing that online communication may have a similar impact and is capable of replicating the facilitative conditions of face-to face encounters (Richards & Vigano, 2013). Barak, Hen, Boniel-Nissim, and Shapira (2008) evidenced that the use of online interventions are as efficacious or nearly as efficacious as face-to face contacts. Cohen and Kerr (1998) reported that there were no differences regarding ratings of depth, smoothness, or positivity between online and face to face contacts between professional helpers and clients.

Apart from the motives for the client to use Whatsapp and the different functions it had for her, we also wanted to know what the patterns of dominance and balance were. Compared to the investigated patterns of dominance and balance investigated in Study 1 (Chapter 2) during face-to-face meetings, we found that the client was relatively more dominant. The client in study 5 asked more questions compared to the questions asked by other clients during their face-to face meetings. The client in study 5 also initiated new words significantly more often than support staff. Therefore, online communication allowed the client to play an active role. Other studies, such as in therapeutic contexts, found that clients participated more actively during online communications compared to face-to face contacts (Day & Schneider, 2002).

A reason of the active participation of the client during the WhatsApp conversations may be that she feels safe and comfortable while texting. Advantages of online communication may include convenience, anonymity, and privacy (McMurtry & Hudson, 2000).

Thus, individuals presented with specific issues, such as social anxiety, may need to communicate without fearing the other person's reaction (Liebert & Archer Jr., 2006). Another possible explanation of the relatively high level of dominance of the client during the WhatsApp conversations is that text messages allowed the client sufficient time to process information and to regulate and formulate her thoughts (Suler, 2000). The time delay brings a relief from any pressure of urgency, which in turn, can facilitate time to process experiences and emotions, reduce impulsivity and enable clients to engage in deeper reflection (Hanley, 2009).

The interactional patterns of dominance and balance were related to linguistic coupling. More specifically, the questions asked by support staff were associated with coherence in used words (e.g. similar used words by support staff and clients) and the questions asked by clients created more diversity in used words. This aligns with the results of Studies 2 and 3 (Chapter 3 and 4), where we found that support staff used their verbal skills to enhance attunement with clients by synchronizing their turn taking patterns. In Study 5, it also seemed that support staff were more capable to drive the dynamic synchronization of behavior. Only when support staff directed the content of the conversation by asking questions, and possibly bringing back the client to the main topic, there was more stability in linguistic coupling. Support staff, thus, have an important task in guiding conversations with clients with ID by structuring, summarizing, and asking questions.

Meaning and implications for research and practice

The present thesis focused on interactional patterns, and more specific on the attunement between support staff and clients with mild to borderline ID during their regular contacts. To have successful interactions support staff and clients have to coordinate both the content and process of what they are doing (Clark & Brennan, 1991) The focus on interactional patterns is scarce within the field of research on support staff –clients with ID interactions and therefore a valuable contribution to research that focuses on support staff or client behavior during interactions. The interactional patterns found in this thesis indicate that in general support staff and clients with ID are able to tune in to each other while interacting. Their face-tot face interactions and WhatsApp conversations were reasonably balanced in terms of power distribution and support staff and clients turn taking patterns and linguistic utterances were synchronized. In general it was support staff that enhanced the attunement by synchronizing their non-verbal behavior. Especially the questions asked by support staff were associated with the level of synchronization. This means that support staff have an important task in guiding conversations with clients with ID, for example by structuring the content. Support staff did seem to be aware of their verbal skills to enhance attunement, since they talked about using language that clients could comprehend, carefully pacing the conversation and checking to ensure there was mutual understanding about what had been said.

However, their focus on verbal interactional skills contrasts with the more nuanced and tacit skills of dynamic synchronization of non-verbal communication. The dynamic synchronization of non-verbal behavior occurs at an unconscious level and reflects the ability to being adaptive and/or responsive to the other's nuanced actions. The manner and extent to which people synchronize behaviour matching during dialogue is assumed to be related to rapport and cooperation efficiency (Delaherche et al. , 2012) Therefore the underlying dynamic processes play a significant role in support staff- client interactions. In other words, it is not what we communicate (i.e. content), but how we communicate (i.e. process) that determines what actually happens between two people. This is interesting as our communication style says something about the relationship between people and how we think and feel. As already Argyle (1967) pointed out, nonverbal cues are an important element in social interactions. Mehrabian and Wiener (1967) made clear that in cases of inconsistencies between verbal and nonverbal behavior, it is the nonverbal information which is allocated the greatest significance. Despite this knowledge and the growing body of work in the field of verbal communication between staff and clients, there is a paucity of research concerning the underlying nonverbal dynamic processes that occur during communication in support staff-client interactions. The present thesis tried to re-establish the valuation of research on these non-verbal aspects of communication during support staff-client conversations.

An important finding in my thesis is that support staff did not seem to detect these underlying dynamic processes, albeit clients did. This means that clients are able to detect implicit social cues. Clients valued support staff that was honest, sincere, took an interest, listened to them carefully and it is certainly possible that clients can 'read' these values from unconscious and unintentional non-verbal behavior. This is in line with other studies that found striking insights into the brain's sensitivity to social information (for a review, see Cacioppo, Visser, & Pickett, 2006) and the way in which people think and act cooperatively (Hutchins, 1995). Some studies evidenced that this sensitivity is even present at a young age. For example the study on mother-infant gaze flexibility during reunion in a still-face procedure (De Graag, Cox, Hasselman, Jansen, & de Weerth, 2012) and intervention-induced changes in parent-child conflict conversations (Lichtwarck-Aschoff, Hasselman, Cox, & Granic, 2011). Therefore, we advocate for a more prominent role for non-verbal communication during support staff training, but also during research in support staff-client interactions. One method to investigate underlying dynamic patterns is the use of Cross and Auto RQA. This analysis is rather new in social sciences and as far as we know, no studies have adapted this method during support staff-clients with ID interactions.

Another important finding in my thesis is that support staff and clients have a tendency to be sensitive to different aspects of interactions. It seems that support staff proved to be more sensitive to dominance and balance, whereas clients appeared sensitive to the synchrony of non-verbal behavior. Our findings point to a potential tension between policies and practices for support staff. On the one hand they are encouraged to enhance clients' self-efficacy and independence, and on the other hand, clients with intellectual disabilities express a clear need of support and help (Donner, Mutter & Scior, 2010). There is a possibility that support staff concerned with empowerment may not always be attuned to clients' wishes and expectations. It would be paradoxical if an attempt to foster agency resulted in people's own wishes and needs being overlooked. The theoretical framework of the self-determination theory developed by Ryan and Deci (1985, 2000) distinguishes three basic and universal needs of human beings: Relatedness, autonomy and competence. According to the self-determination theory, individuals can only experience optimal wellbeing when all three needs are being satisfied (Ryan & Deci (2000). For instance, when support staff fulfil the need of autonomy, but fail to nurture relatedness, it does not have a positive impact on the clients' wellbeing. This has important implications for support staff training and recognizing that a focus on autonomy alone might not be sufficient for client to feel that they are afforded a proper role in the interaction.

Although the interactional patterns found in this thesis provided implications for support staff training, there seems to be a lack of means that support clients in their collaboration with support staff. In this light, we found that online communication may help clients in their communication with support staff. In study 5 we found that the client was relatively more dominant and asked more questions during WhatsApp conversations then other clients did during their face-tot-face meetings. Our study has shown that the use of online communication holds great promises for establishing collaborative relationship between support staff and clients with ID. Possible advantages of chatting includes that conversations can be of lower emotional intensity, there is more time to think, the power balance seems more equal between parties, and clients can be more focused and expressive (Richards & Vigano, 2013).

Future research

The present thesis has resulted in many entry points for future research. In each of the chapters, we have described them in more or less detail. I will limit my ideas regarding future research in this chapter to the more general and all embracing ones.

We investigated interactional patterns during regular staff-client interactions, regardless of the content or function of the interaction. It is very well possible that interactional patterns are different in specific contexts. For example, it would be interesting to investigate the patterns of dominance and balance and synchronization during conflict situations compared to regular situations. Next, the topics staff and clients discuss can differ, as well as the function of the interaction (e.g., practical support needs, seeking advice or a listening ear) and the context (e.g., face-to-face, while doing an activity or online). Comparing interactional patterns of different types of conversations and in different context could provide important additional information on how support staff and clients succeed in working collaboratively. For example, it would be interesting to compare interactional patterns during face-to-face conversations with interactions where staff and clients participate in an activity.

Recent studies on interactions mainly focused on interactional styles and emotions of support staff working with clients with ID (Willems, Embregts, Bosman & Hendriks, 2014, Zijlmans, Embregts, Bosman & Willems, 2012, Van Oorsouw, Embregts & Sohier, 2011). The methods we used to investigate interactional patterns of dominance and balance and synchronization of non-verbal behavior are interesting for studying differences between interactional styles of staff or clients. An important question in this regard is whether individual support staff and clients have a tendency to be less or more dominant while interacting and how this relate to levels of synchronization. In other words, if a support staff member or a client tends to be more controlling in general, does this affect the level of attunement on a process level?

I found in my thesis work that staff and clients tend to use different turn types. For example, staff used questions frequently and these questions were associated with attunement on a process level. We also found that the questions used by staff were usually followed by clients providing expanded responses, indicating that staff's questions allowed clients to play an active role during the interactions. This contrast with findings of Antaki, Finlay and Walton (2007a, 2007b), indicating that staff used language styles that assumed greater degrees of impairment than necessary and there was a lack of encouragement for clients to express their own views regarding daily choices. However, we did not investigate the type of questions that were used and whether different types of questions lead to a different level of attunement. This is an area that needs further investigation.

Another important aspect of my thesis is the focus on unconscious and unintentionally non-verbal behavior. The past decade has seen an increase in the use of nonlinear approaches towards the dynamics of interpersonal communication (e.g., Guastello, Pincus, & Gunderson, 2006; Lumsden, Miles, Richardson, Smith, & Macrae, 2012; Pincus, 2001; Pincus & Guastello, 2005; Pincus, Ortega, & Metten, 2010; Richardson, Dale, & Kirkham, 2007; Steenbeek & van Geert, 2007; Stevens et al., 2013; Vallacher, Nowak, & Zochowski, 2005). In recent years several studies that made use of this technique have appeared in the behavioural science literature, and prove its broad applicability and its power to produce interesting results (Cox & Van Dijk, 2013; Dale & Spivey 2006; De Graag, et al., 2012; Louwerse et al., 2012; Lichtwarck-Aschoff, et al. 2012; Orsucci, Walter, Giuliani, Webber, & Zbilut (1999); Wijnants, Hasselman, Cox, Bosman, & Van Orden, 2012).

Cross RQA can identify patterns in communication processes that are not visible in batch analysis. There are many questions that can be answered using Auto and Cross RQA, such as providing information on structural patterns of different non-verbal behaviours (e.g., which behaviours are synchronized and which are not), in different context (e.g., difference between synchronization during conflicts, while doing an activity or a structured task, etc.). This type of analyses can also determine the level of synchronization of inter- and intrapersonal behavior. My thesis has shown that it is a valuable method to discover the structural and temporal organization of support staff-client interactions and we strongly recommend this type of analysis for future research.

Support staff often play a key role in the lives of people with ID (Forrester-Jones et al., 2006; Robertson et al., 2001) and for this reason, much thought and effort goes into promoting support staff skills and training. We acknowledge that this is an important area of research. However, we feel that there is a lack of research on means that would help clients to communicate more effectively with staff. In this light, we found that online communication helped the client to play an active role during interactions with support staff. We speculated that advantages of online communication are the lower level of emotional intensity, there is more time to think, the power balance seems more equal between parties, and clients can be more focused and expressive (Richards & Vigano, 2013). Future research should definitely take into account means that will support clients in their communication with support staff, for example training packages for clients. A promising tool that may help clients is online communication. Since this an upcoming phenomenon, we recommend research that will further enhance the development and implementation of online communication.

Conclusion

The most convincing general explanation of the nature of caring relationships is reciprocity (Bulmer, 1987). What sustains and nurtures helping relationships among people is a sense of exchange and balance in the relationship. The present thesis provided important information on how support staff and clients succeed in reaching attunement while interacting. The interactional patterns found in this thesis suggest that in general support staff and clients are attuned during their interactions. We also found that support staff tend to drive the dynamic synchronization of non-verbal behavior. This means that support staff is capable to connect with clients during face-to face and online contacts, by being responsive to clients' actions and adapt their own actions accordingly. This ability to connect is highly appreciated by clients, but not so much recognized by support staff themselves, nor by research involving support staff competencies. We advocate for a more prominent role for synchronization during support staff training and research involving support staff-client interactions.

The present thesis also provided important insights in the way support staff and clients perceive their interactions. What we need to realize is that support staff and clients with an ID differ in the aspects were they place emphasis on while interacting. Staff's concerns with empowerment do not mean clients' literally holding the floor or clients making all decisions for themselves. Empowerment means that clients feel safe, are being listened to sincerely and receive support that is needed. This is what clients, participating in this thesis, made very clear. Within this safe environment clients can develop themselves and make decisions in accordance with their abilities.

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CHAPTER 8

SAMENVATTING VOOR PROFESSIONALS IN DE PRAKTIJK

Het belangrijkste doel van dit hoofdstuk is om professionals die werken met mensen met een beperking inzicht te geven in de uitkomsten van mijn onderzoek. Naar mijn mening geven de resultaten concrete aanwijzingen voor het verbeteren van de interactie tussen begeleiders en hun cliënten. Ik zal eerst kort de achtergrond van mijn onderzoek schetsen. Vervolgens bespreek ik de resultaten. Daarna zal aandacht worden besteed aan wat de uitkomsten betekenen voor de ondersteuning van mensen met een beperking. Tenslotte, zal ik ingaan op enkele vragen die uit mijn onderzoek zijn voortgekomen en die in een vervolgstudie onderzocht kunnen worden.

Achtergrond

Een belangrijk doel van de dienstverlening aan mensen met een beperking is hen te ondersteunen bij hun dagelijks leven (Bellamy, Newton, LeBaron, & Horner, 1990). De kwaliteit van levensdomeinen als relaties, persoonlijke ontwikkeling, zelfbeschikking en algemeen welbevinden van mensen met een beperking is voor een belangrijk deel afhankelijk van de wijze waarop deze dienstverlening vorm gegeven wordt. De wijze waarop begeleiders interacteren met mensen met een beperking speelt daarin een zeer belangrijke rol (Schalock, 2004; Social Exclusion Unit 2005, p. 57).

Interacties tussen mensen is meestal onderzocht door te kijken naar individuele gedragingen (Linell & Markova, 1993; Markova & Linell, 1996). Dit terwijl het belangrijkste kenmerk van een interactie juist de (on)bewuste onderlinge wisselwerking is (Stevens, Gorman, Amazeen, Likens, & Galloway, 2013). De actie van bijvoorbeeld de begeleider roept een reactie van de cliënt op, die op haar beurt weer de reactie van de begeleider beïnvloedt. Dit betekent dat het observeren van individuele gedragingen zonder dat de gedragingen van de partner daarin betrokken worden, slechts beperkte informatie verschaft over het interactieproces tussen beiden.

De essentie van interacties is het voortdurende proces van waarnemen en reageren. Hierbij beïnvloedt het waarnemen het reageren en het reageren het waarnemen. In de samenwerkings- of begeleidingsrelatie tussen begeleiders en mensen met een beperking is het daarom belangrijk te weten hoe dit proces van interacties eruit ziet. De kwaliteit van het proces wordt ook wel aangeduid met interactiepatronen. De belangrijkste vraag wordt dan: Welke interactiepatronen zorgen voor een fijn contact, zorgen voor een goede afstemming op elkaar, waardoor goede hulp tot stand kan komen? Kennis op dit terrein is beperkt, maar noodzakelijk voor een goede dienstverlening.

De JP van den Bent stichting, een stichting die diensten verleent aan mensen met een beperking, is zich bewust van het belang van deze kennis. Dit was de belangrijkste reden voor de stichting het onderzoek naar interactiepatronen en afstemming tussen begeleiders en cliënten mogelijk te maken.

Voor dit onderzoek zijn reguliere begeleidingsgesprekken en WhatsApp gesprekken gebruikt. Hiermee bedoelen we gesprekken die sowieso plaatsvonden en niet speciaal voor dit onderzoek zijn gehouden. Verschillende ondersteuningsvragen kwamen aan bod, zoals hulp bij praktische zaken, het aanleren van vaardigheden en het helpen om het hoofd van de cliënt leeg te maken. De begeleidingsgesprekken vonden plaats bij de cliënt thuis en werden opgenomen op video door de begeleider zelf. De videobeelden zijn later gebruikt voor analyses.

Resultaten

De interacties en de onderlinge afstemming van deze gesprekken zijn op twee manieren bekeken, namelijk naar de manier waarop men de inhoud vormgaf en het proces. Eerst heb ik mijn aandacht gericht op de inhoud/vorm van de interactie. Bij de inhoud hebben we niet zozeer gekeken naar wat er precies werd gezegd, maar naar hoe men reageert op de beurt van een ander. Op een vraag verwacht je bijvoorbeeld een antwoord en een antwoord kan kort of uitgebreid zijn. Als je veel vragen stelt lijkt het gesprek op een kruisverhoor en lange monologen leiden tot een eenzijdig gesprek. Bij de inhoud of vorm van de interactie gaat het dus om het actief bijdragen tot en onderhouden van een gezamenlijk gesprek en niet zozeer om wie de meeste onderwerpen naar voren brengt of hoeveel iemand praat. In de eerste studie die is uitgevoerd (zie Hoofdstuk 2) is nagegaan of de interacties gebalanceerd waren.[1] Dat wil zeggen, oefenen beide gesprekspartners evenveel invloed op de inhoud van de gesprekken en welke strategieën worden er gebruikt om aan het gesprek bij te dragen. Strategieën zijn bijvoorbeeld de regie voeren over het gesprek door het stellen van vragen, bijdragen van anderen vermijden of samenhang creëren door in te gaan op wat de ander zegt. De resultaten laten zien dat begeleiders over het algemeen meer invloed hebben op de inhoud van de begeleidingsgesprekken dan mensen met een beperking. Begeleiders zijn dus enigszins dominanter tijdens het gesprek, maar dit verschil is relatief klein en vergelijkbaar met informele gesprekken tussen vrienden (Linell et al., 1988).

Ondanks dat de balans in gesprekken tussen begeleiders en mensen met een beperking redelijk goed is, gebruiken begeleiders wel andere strategieën om de inhoud van het gesprek te beïnvloeden. Zo stellen begeleiders bijvoorbeeld meer vragen en gaan ze soms niet in op een nieuw punt dat de cliënt inbrengt. Daarentegen geven mensen met een beperking vaak uitgebreid antwoord op de vragen van begeleiders, waardoor het gesprek op gang blijft. Het lijkt er dus op dat de vragen die begeleiders stellen de mensen met een beperking in staat stellen om actief bij te dragen aan de gesprekken.

[1] Voor dit onderzoek is gebruik gemaakt van de initiatief-respons analyse van Linell, Gustavsson en Juvonen (1988) om naast de dominantie van de gesprekken ook het type beurten, zoals het stellen van vragen, het geven van uitgebreide reacties, het plotseling veranderen van onderwerp en het houden van monologen vast te kunnen stellen.

Daarnaast houden zowel begeleiders als mensen met een beperking soms monologen in plaats van dialogen; men heeft dan minder oog heeft voor dat wat de ander wil bijdragen. Het houden van monologen kan te maken hebben met een soort strijd over de inhoud van de interacties. Wanneer cliënten de inhoud van het gesprek bepalen door vragen te stellen, veranderen begeleiders vaker plotseling van onderwerp. Een reden kan zijn dat begeleiders het gesprek weer terug willen brengen naar het oorspronkelijke gespreksonderwerp. In sommige gevallen reageren de cliënten door ook plotseling van onderwerp te veranderen. Het lijkt er dus op dat begeleiders en mensen met een beperking soms een verschillend doel voor ogen hebben tijdens een begeleidingsgesprek. Mogelijk ervaren zij daardoor problemen in het tot stand brengen van een gezamenlijke dialoog. Tot zover hebben we gekeken naar de verbale of talige vorm van de interacties. We hebben daarnaast onderzoek gedaan naar de non-verbale gedragingen of de non-verbale interactiepatronen tussen begeleiders en mensen met een beperking. Dit wordt ook wel aangeduid met het procesniveau van de interactie.

In de tweede studie (zie Hoofdstuk 3) heb ik specifiek gekeken naar het afstemmen van oogcontact en het geven en nemen van beurten.[2] Afstemmen hebben we gemeten door te kijken naar synchronie. De resultaten hiervan laten zien dat begeleiders en mensen met een beperking het geven en nemen van beurten op elkaar afstemmen. Tijdens een gesprek signaleer je wanneer het jouw beurt is om te praten. Vaak wacht je totdat de ander is uitgesproken, soms val je enthousiast in, soms onderbreek je. Een gesprek waarin men altijd precies wacht tot de ander klaar is met praten komt onnatuurlijk over. Een gesprek waarin je de ander vaak onderbreekt voelt niet prettig. In het algemeen zien we dat begeleiders en mensen hun beurten goed afstemmen. Opvallend is dat begeleiders en mensen met een beperking hun oogcontact niet synchroniseren.

We hebben ook aan onafhankelijke begeleiders en cliënten gevraagd om naar de opgenomen gesprekken te kijken. Deze observanten kenden de mensen op de videobeelden niet. Ze moesten aangeven wat ze van de gesprekken vonden. We hebben ze gevraagd of ze vonden dat de begeleider op de video goed luisterde naar de cliënt, of ze dachten dat de cliënt over dit onderwerp wilde praten, wat ze vonden van de manier waarop de begeleider de onderwerpen besprak en de algemene indruk van het gesprek. Bij elke vraag moesten ze een rapportcijfer invullen.

[2] Om deze analyses mogelijk te maken werd er gebruik gemaakt van zogenaamde niet-lineaire tijd-serie analysetechnieken, aangeduid met Auto en Cross Recurrence Quantification Analysis (ARQA en CRQA; e.g., Church, 1993; Eckmann, Kamphorst, & Ruelle, 1987; Marwan, Romano, Thiel, & Kurths, 2007; Von Heijne, 1987; Zbilut & Webber, 1992; zie ook Dale and Spivey, 2005, voor een beoordeling en Webber & Zbilut, 2005, voor een technische introductie).

Het blijkt dat mensen met een verstandelijke beperking veel gevoeliger zijn voor de mate waarin synchronie en afstemming wordt bereikt in het geven en nemen van beurten dan begeleiders. Dus als er een hogere mate van synchronie was dan vonden zij de gesprekken fijner. Begeleiders waren juist gevoeliger voor de mate waarin iemand praatte. Als begeleiders veel aan het woord waren, vonden zij de kwaliteit van de gesprekken slechter en wanneer mensen met een beperking meer spraken, vonden ze de kwaliteit van de gesprekken beter.

Deze resultaten geven aan dat mensen met een beperking gevoelig zijn voor de onderliggende (dynamische) processen die plaats vinden tijdens gesprekken. Volgens Delaherche, Chetouani, Mahdaoui, Saint-Georges, Viaux en Cohem (2012) is het kunnen synchroniseren, dat wil zeggen het afstemmen van je (non-verbale) gedrag op de ander, gerelateerd aan begrippen als verbondenheid, de soepelheid van een gesprek en efficiënt kunnen samenwerken. Omdat mensen met een beperking gevoelig zijn voor de mate van synchronie, kan het dus zijn dat zij vooral gericht zijn op een goede relatie met begeleiders. Het is opmerkelijk dat met name mensen met een beperking gevoelig zijn voor de mate van afstemming tijdens gesprekken. Maar welke rol die afstemming precies speelt is daarmee nog niet duidelijk. Om die reden hebben we vervolgens de relatie tussen afstemming op inhoudsniveau en de afstemming op procesniveau onderzocht. Met andere woorden, als begeleiders en mensen met een beperking de inhoud van een gesprek op elkaar afstemmen en een gebalanceerd gesprek voeren, zien we dit dan ook terug in het op elkaar afstemmen van het geven en nemen van beurten (Delaherche et al., 2012)?

In de derde studie (zie Hoofdstuk 4) werd duidelijk dat als begeleiders meer invloed hebben op de inhoud van de gesprekken dat er een hogere mate van synchronie is. Als mensen met een beperking meer invloed hebben op het gesprek dan leidt dit juist tot een lagere mate van synchronie. Dit suggereert dat begeleiders hun verbale kwaliteiten gebruiken om af te stemmen op mensen met een verstandelijke beperking. Begeleiders zijn de drijvende kracht achter het synchroniseren van de beurten. Het bleek ook dat hoe meer invloed de cliënt heeft, hoe hoger de begeleiders de kwaliteit van de gesprekken beoordeelden. Begeleiders leggen dus de nadruk op zeggenschap en ‘empowerment’ van de cliënt. Dit komt overeen met de huidige visie in de zorg en ondersteuning aan mensen met een beperking waarin men vraaggericht werkt en de cliënt centraal stelt. Het is mogelijk dat begeleiders het begrip zeggenschap of ‘empowerment’ zo vertalen dat mensen met een verstandelijke beperking letterlijk meer invloed moeten hebben op gesprekken. Dit contrasteert met de meer genuanceerde onderliggende dynamische interactiepatronen gevonden in dit onderzoek, die meer inzicht geven in de wederkerigheid tussen begeleiders en mensen met een beperking. Met andere woorden, zeggenschap en empowerment bereik je niet alleen door mensen letterlijk meer ruimte te geven, maar ook door ontvankelijk te zijn voor de ander en af te stemmen.

Een opvallende uitkomst van deze studie is dat begeleiders de onderliggende dynamische processen, dat wil zeggen de non-verbale afstemming, niet lijkt te zijn opgevallen. Mensen met een beperking blijken daarentegen wel gevoelig voor deze non-verbale afstemming en niet zozeer voor de mate van dominantie. Zij lijken het onderhouden van een goed contact (lees goede afstemming) met begeleiders belangrijk te vinden. Dit komt overeen met een studie van Ramseyer en Tschacher (2011). Een goede non-verbale afstemming tussen therapeut en cliënt tijdens psychotherapeutische gesprekken ging samen met een positieve uitkomst van de therapie. Ook vonden de cliënten het therapieproces beter als er een goede non-verbale interactie was. De resultaten van ons onderzoek suggereren dat begeleiders en mensen met een beperking gevoelig zijn voor verschillende aspecten van de interactie. Om meer zicht te krijgen op wat die mogelijke verschillende aspecten zijn hebben we begeleiders en mensen met een beperking gevraagd hoe zij hun reguliere begeleidingsgesprekken ervaren.

In de vierde studie (zie Hoofdstuk 5) werd daarom onderzocht wat de verwachtingen en doelen zijn van begeleiders en mensen met een beperking ten aanzien van begeleidingsgesprekken, maar ook wat zij daarin belangrijk vonden. Er werden interviews gehouden met negen koppels van begeleiders en cliënten. Vlak voor hun begeleidingsgesprek werd gevraagd wat hun verwachtingen waren en direct na het gesprek werd gevraagd wat zij van het gesprek vonden. De antwoorden werden thematisch geanalyseerd.

Een belangrijk resultaat is dat mensen met een beperking het waarderen dat zij, behalve advies en praktische ondersteuning, hun hart kunnen luchten en betrouwbare ondersteuning krijgen. Zowel begeleiders als mensen met een beperking vinden de vertrouwensband zeer belangrijk (ook gevonden door Clarkson, Murphy, Coldwell, & Dawson, 2009; Kilbane & Jahoda, 2011; McVilly, Stancliffe, Parmenter, & Burton-Smith, 2006; Roeleveld, Embregts, Hendriks, & Van den Bogaard, 2011). Interessant is dat alleen door begeleiders de wens werd geuit om de autonomie van de cliënt te vergroten. Een mogelijk gevaar van deze gerichtheid op het vergroten van de autonomie van de cliënt, is dat ondersteuningsvragen van mensen met een beperking over het hoofd worden gezien.

Dit resultaat duidt op een mogelijk spanningsveld tussen beleid en praktijk. Aan de ene kant worden begeleiders aangemoedigd de zelfredzaamheid en onafhankelijkheid van mensen met een beperking te vergroten, aan de andere kant geven mensen met een beperking duidelijk aan behoefte te hebben aan ondersteuning (Donner, Mutter, & Scior, 2010). Met andere woorden, begeleiders die zich richten op het vergroten van de autonomie van mensen met een beperking, zullen tevens kwetsbaarheden en ondersteuningsvragen in het proces moeten betrekken (Embregts, 2009, 2011). Begeleiders bleken zich wel degelijk bewust hiervan. Zij stelden dat ze het belangrijk vonden om hun communicatie op de cliënt aan te passen, door begrijpelijke taal te gebruiken, het tempo van de cliënt te volgen en na te vragen of men hetzelfde bedoelde tijdens gesprekken.

Deze bevindingen komen overeen met de resultaten uit het derde onderzoek (Hoofdstuk 4), waaruit blijkt dat begeleiders de drijvende kracht zijn achter de mate van afstemming tussen begeleiders en mensen met een beperking. Dit vermogen van begeleiders om af te stemmen op mensen met een beperking, hangt niet alleen samen met de onderlinge relatie, maar ook met een betere samenwerking (Delaherche et al., 2012).

De resultaten tot nu toe zijn zeker positief te noemen. Begeleiders en mensen met een verstandelijke beperking kunnen goed tot afstemming komen tijdens reguliere begeleidingsgesprekken, zowel op inhouds- als op procesniveau. Een belangrijke vervolgvraag die opkomt in het zich snel ontwikkelende digitale tijdperk is hoe interacties verlopen tijdens digitale gesprekken.

In de vijfde en laatste studie (zie Hoofdstuk 6) werden de WhatsApp interacties tussen negen begeleiders en één cliënt onderzocht. De belangrijkste vraag was in hoeverre zij hun digitale communicatie synchroniseren en in hoeverre de WhatsApp gesprekken in balans zijn wat machtsverdeling betreft. Daarnaast werd de cliënt gevraagd wat de beweegredenen waren om via WhatsApp te communiceren. Er werden 40 WhatsApp gesprekken geanalyseerd tussen de negen verschillende begeleiders en deze ene cliënt.

Het bleek dat de cliënt WhatsApp met name gebruikte voor praktische hulpvragen en voor het kunnen uiten van gedachtes en gevoelens. Zij waardeerde het als er naar haar werd geluisterd en als ze het gevoel had gehoord te worden. Dit komt overeen met resultaten uit studies waarin gevraagd werd naar de perceptie van mensen met een beperking op de relatie met begeleiders tijdens face-to-face contacten. Uit onze vierde studie (Hoofdstuk 5) is immers gebleken dat mensen met een beperking aangeven het belangrijk te vinden dat ze gelegenheid krijgen om hun verhaal te doen en dat er naar ze geluisterd wordt (zie ook Clarkson et al., 2009; Roeleveld, et al., 2011). Dit suggereert dat WhatsApp gesprekken een vergelijkbare functie kunnen hebben als face-to-face gesprekken (zie ook Richards & Vigano, 2013). Ook online therapie kan net zo efficiënt zijn als face-to-face therapie (Barak, Hen, Boniel-Nissim, & Shapira, 2008) met net zoveel diepgang, efficiëntie en positiviteit (Cohen & Kerr, 1998).

Los van de motieven van de cliënt om WhatsApp te gebruiken, stond in ons onderzoek de verhouding in dominantie tussen begeleiders en de cliënt tijdens deze gesprekken centraal. Vergeleken met de mensen met een beperking die deelnamen aan de face-to-face gesprekken (Studies 1 tot 3) bleek deze ene cliënt dominanter. Zij leek dus relatief meer invloed te hebben op de inhoud van het WhatsApp gesprek dan de cliënten die reguliere begeleidingsgesprekken voeren. Deze cliënt stelde ook beduidend meer vragen dan de mensen met een beperking die face-to-face gesprekken hadden gevoerd. Ook nam zij vaker dan de begeleider het initiatief, in de zin dat zij vaker nieuwe woorden initieerde tijdens gesprekken. Dit betekent dat de cliënt een actieve rol had binnen de WhatsApp gesprekken.

Andere studies, zoals in therapeutische contexten, vonden dat mensen met een beperking een actievere rol hadden online dan tijdens face-to-face contacten (Day & Schneider, 2002). Een reden voor de actieve participatie van cliënten online kan zijn dat ze zich relatief veilig voelen. Voordelen van digitale communicatie zijn het gemak, de anonimiteit en de privacy (McMurtry & Hudson, 2000). Individuen kunnen online communiceren zonder angst voor de directe reactie van anderen (Liebert & Archer Jr., 2006).

Een andere mogelijke verklaring voor de relatief hoge mate van dominantie van de cliënt tijdens WhatsApp gesprekken is dat getypte berichten haar voldoende tijd gunnen om de informatie te verwerken en om haar gedachten te vormen en te verwoorden (Suler, 2000). De vertraging kan de druk om een onmiddellijke reactie te geven verminderen, wat de cliënt voldoende tijd geeft om ervaringen en emoties te verwerken, wat de impulsiviteit vermindert en reflectie bevordert (Hanley, 2009).

De vragen die de negen begeleiders stelden, zorgden voor een betere afstemming in woordgebruik. Daarentegen zorgden de vragen van de cliënt voor een grotere diversiteit in het woordgebruik en een lager niveau van synchronie. Dit komt overeen met resultaten uit de face-to-face gesprekken, waarin we vonden dat begeleiders hun verbale kwaliteiten gebruiken om af te stemmen op mensen met een beperking. Ook in de online studie blijken begeleiders de dragende kracht achter de mate van afstemming. Slechts wanneer begeleiders de inhoud van het gesprek bepalen middels het stellen van vragen, en mogelijk daarmee de cliënt terug brengen naar de oorspronkelijke agenda, is er stabiliteit en afstemming in het woordgebruik. Daarom hebben begeleiders een belangrijke taak in het leiden en structureren van gesprekken met mensen met een beperking. Het is wel belangrijk er op te wijzen dat aan het WhatsApp onderzoek slechts één cliënt heeft deelgenomen. We moeten daarom voorzichtig zijn met het interpreteren van de resultaten en ze niet zondermeer generaliseren naar andere cliënten.

Betekenis voor de praktijk en onderzoek

Dit onderzoek richtte zich op interactiepatronen en meer specifiek op afstemming tussen begeleiders en mensen met een beperking tijdens reguliere begeleidingsmomenten. Om succesvolle interacties te hebben, moeten begeleiders en mensen met een beperking samen werken. Zo moet men bijvoorbeeld adequaat reageren op hetgeen de ander zegt en timen wanneer men aan de beurt is om te spreken. Een belangrijke uitkomst van ons onderzoek is dat in het algemeen begeleiders de drijvende kracht blijken achter de mate van afstemming. Met name de vragen die begeleiders stellen, bevorderden de synchronie. Dit betekent dat begeleiders een belangrijke taak hebben in het begeleiden van gesprekken met mensen met een beperking, bijvoorbeeld door het structureren van zo'n gesprek. Begeleiders lijken zich bewust van deze rol, aangezien ze spreken over het aanpassen van hun taalgebruik door eenvoudige taal te gebruiken, de cliënt te volgen en te checken of men hetzelfde bedoelt.

Deze punten gaan met name over verbale kwaliteiten. Tijdens ons onderzoek kwamen we erachter dat juist ook onderliggende dynamische processen een belangrijke rol spelen in de begeleidingsgesprekken. Hiermee bedoelen we het synchroniseren en afstemmen van non-verbaal gedrag. Met andere woorden, niet alleen wat we communiceren, maar zeker ook hoe we communiceren, bepaalt in grote mate wat er gebeurt tussen mensen. Onze communicatiestijl zegt dus iets over de relatie tussen mensen. Al in 1967 wees Argyle op het feit dat non-verbale signalen belangrijke aspecten zijn van sociale interacties. Ondanks deze kennis en het groeiend aantal onderzoeken naar verbale communicatie tussen begeleiders en mensen met een beperking, is er gebrek aan onderzoek naar de onderliggende dynamische processen die zich afspelen tijdens begeleidingsgesprekken. Daarom pleiten we voor een prominentere rol voor non-verbale communicatie tijdens trainingen voor begeleiders, maar ook tijdens onderzoek naar communicatie tussen begeleiders en mensen met een beperking.

Een andere belangrijke uitkomst van dit onderzoek is dat begeleiders en mensen met een beperking gevoelig zijn voor verschillende aspecten van hun interacties. Het lijkt dat begeleiders gevoeliger zijn voor dominantie en balans in interacties. Zij willen dat mensen met een beperking meer inbreng hebben tijdens gesprekken, terwijl mensen met een beperking juist gevoeliger lijken te zijn voor de mate van non-verbale synchronie. Hierdoor kan een spanningsveld ontstaan. Begeleiders richten zich op de zeggenschap en autonomie van mensen met een beperking, maar moeten daarbij hun wensen en ondersteuningsbehoeftes niet vergeten. De zelfdeterminatie theorie van Ryan en Deci (1985, 2000) onderscheidt drie basale behoeftes van de mens, namelijk verbondenheid, autonomie en competentie. Volgens deze theorie kunnen mensen alleen tot bloei komen als aan alle drie behoeftes wordt voldaan (Ryan & Deci, 2000). Als begeleiders bijvoorbeeld wel inzetten op autonomie van de cliënt, maar daarbij geen oog hebben voor de onderlinge relatie, wordt het welzijn van de cliënt niet bevorderd. Dit betekent dat de focus op autonomie alleen onvoldoende is voor de cliënt om zich gehoord te voelen.

Uit ons onderzoek is eveneens gebleken dat de inbreng van mensen met een beperking vaak leidt tot een mindere mate van afstemming. Dit zet vraagtekens over de moeilijkheidsgraad van onze gesprekken. Vragen die opkomen zijn bijvoorbeeld;

- Is het taalgebruik te moeilijk, waardoor mensen met een beperking niet goed kunnen reageren?
- Krijgen mensen met een beperking voldoende tijd om de informatie te verwerken tijdens gesprekken?
- Wordt er voldoende aangesloten bij de inbreng van mensen met een beperking zelf?
- Is de hoeveelheid verbale informatie niet te groot?

Hoewel begeleiders tijdens gesprekken goed in staat blijken om af te stemmen op mensen met een beperking, kan het zijn dat de vorm waarin deze gesprekken plaatsvinden niet altijd goed aansluit. Een gesprek bevat namelijk een grote hoeveelheid verbale informatie. Daarom is het goed om te kijken naar vormen en middelen die mensen met een beperking helpen in hun communicatie met begeleiders. In dat opzicht lijkt online communicatie een veelbelovend hulpmiddel en een goede aanvulling op de face-to-face gesprekken. In Studie 5 vonden we dat de cliënt relatief meer invloed had tijdens de WhatsApp gesprekken en meer vragen stelde dan andere mensen met een beperking deden tijdens hun reguliere begeleidingsgesprekken. Uit literatuur blijkt dat mogelijke voordelen van online communicatie zijn dat gesprekken een lagere emotionele intensiteit kunnen hebben, er is meer tijd om na te denken, er is meer gelijkheid tussen gesprekspartners en men kan zich beter focussen en uiten (Richards & Vigano, 2013). Er is echter nog weinig onderzoek gedaan naar de bruikbaarheid en effecten van online hulpmiddelen voor mensen met een beperking. Toekomstig onderzoek zou zich meer kunnen richten op middelen die mensen met een beperking helpen in de communicatie met begeleiders.

Suggesties verder onderzoek

Hierboven staan al enige aanknopingspunten voor verder onderzoek genoemd. In het volgende deel willen we er nog enkele aan toevoegen die specifiek gaan over onderzoek naar interactiepatronen en afstemming.

Wij hebben interactiepatronen tussen begeleiders en cliënten onderzocht tijdens reguliere begeleidingsmomenten, los van de inhoud of functie van deze begeleidingsgesprekken. Het is echter aannemelijk dat de interactiepatronen verschillen in verschillende contexten. Het is bijvoorbeeld interessant om interactiepatronen van dominantie en synchronisatie te onderzoeken tijdens conflictsituaties. Zowel de besproken onderwerpen als de functies van de begeleidingsgesprekken verschillen, zoals het vragen om advies, praktische ondersteuning of een luisterend oor. Daarnaast verschilt de setting, bijvoorbeeld een gesprek tijdens een activiteit, online, op het werk, etc. Het vergelijken van interactiepatronen tijdens verschillende type gesprekken en in verschillende contexten kan belangrijke aanvullende informatie opleveren over hoe begeleiders en mensen met een beperking op elkaar afstemmen.

Recentelijk onderzoek naar interacties tussen begeleiders en mensen met een beperking hebben zich gericht op begeleidingsstijlen en emoties van begeleiders (Willems, Embregts, Bosman, & Hendriks, 2014; Zijlmans, Embregts, Bosman, & Willems, 2012; Van Oorschouw, Embregts, & Sohier, 2011). De methodes die wij hebben gebruikt om interactiepatronen van dominantie en balans en synchronie van non-verbaal gedrag te onderzoeken lijken geschikt om verschillen tussen interactiestijlen van begeleiders en of mensen met een beperking te bestuderen. Een belangrijke vraag kan zijn of individuen de neiging hebben om in meerdere of mindere mate dominant te zijn en hoe zich dat verhoudt tot non-verbale synchronie. Met andere woorden, wanneer een begeleider of cliënt in het algemeen meer controlerend is, wat betekent dat dan voor de non-verbale afstemming?

In ons onderzoek hebben we gevonden dat begeleiders en mensen met een beperking de neiging hebben verschillende type beurten te gebruiken. Zo stellen begeleiders bijvoorbeeld vaker vragen en deze vragen hingen samen met non-verbale synchronie. We vonden ook dat de vragen van begeleiders vaak worden gevolgd door een uitgebreid antwoord van mensen met een beperking. De vragen van begeleiders stellen mensen met een beperking dus in staat om een actieve rol te spelen tijdens de gesprekken. Dit staat in contrast met bevindingen van Antaki, Finlay en Walton (2007a, 2007b), die aangeven dat begeleiders taal gebruiken die niet aansluit bij mensen met een beperking. Ook vonden zij dat mensen met een beperking te weinig mogelijkheden krijgen om hun mening of keuze aan te geven over dagelijkse zaken. We hebben echter niet onderzocht wat voor type vragen er werden gesteld en of verschillende type vragen leiden tot een verschillend niveau van afstemming. Hier zou nog verder onderzoek naar kunnen worden gedaan.

Conclusie

Het belangrijkste kenmerk van een goede samenwerkingsrelatie is wederkerigheid (Bulmer, 1987). Wat een relatie voedt en onderhoudt is een gevoel van uitwisseling en evenwicht. Dit proefschrift bevat belangrijke informatie over hoe begeleiders en mensen met een beperking erin slagen om op elkaar af te stemmen tijdens hun gesprekken. De interactiepatronen gevonden in dit onderzoek suggereren dat in het algemeen begeleiders en cliënten zowel op inhoudsniveau als op procesniveau op elkaar zijn afgestemd. Het zijn met name de begeleiders die zorgen voor de dynamische synchronisatie van non-verbale gedragingen. Dit betekent dat begeleiders in het algemeen bekwaam zijn om verbinding te leggen met mensen met een beperking tijdens face-to-face en online gesprekken. Zij kunnen inspelen op (onbewuste non-verbale) gedragingen van de cliënt en hun eigen gedrag vervolgens aanpassen. Deze bekwaamheid wordt zeer gewaardeerd door mensen met een beperking, maar nauwelijks herkend door begeleiders zelf of meegenomen in onderzoek naar competenties van begeleiders. Wij pleiten daarom voor een prominentere rol voor onderliggende dynamische processen die zich afspelen tijdens interacties, met name tijdens trainingen voor begeleiders, maar ook binnen onderzoek naar interacties tussen begeleiders en mensen met een beperking.

Het huidige proefschrift bevat eveneens belangrijke inzichten in hoe begeleiders en mensen met een beperking naar hun gesprekken kijken. We moeten ons realiseren dat begeleiders en cliënten de nadruk leggen op verschillende aspecten van de interacties. De focus van begeleiders op zeggenschap en 'empowerment' betekent niet dat mensen met een beperking letterlijk meer inbreng moeten hebben en dat ze alle keuzes zelf moeten maken. Het begrip 'empowerment' impliceert dat mensen met een beperking zoveel mogelijk in hun kracht gestimuleerd worden, maar ook dat er aandacht wordt besteed aan een gevoel van veiligheid, dat er oprecht naar ze geluisterd wordt en dat ze de ondersteuning krijgen die ze nodig hebben. Dat is wat de mensen met een beperking die hebben deelgenomen aan dit onderzoek heel duidelijk hebben gemaakt. Binnen deze veilige omgeving kunnen mensen met een beperking zich ontwikkelen en keuzes maken die passen bij hun mogelijkheden.

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